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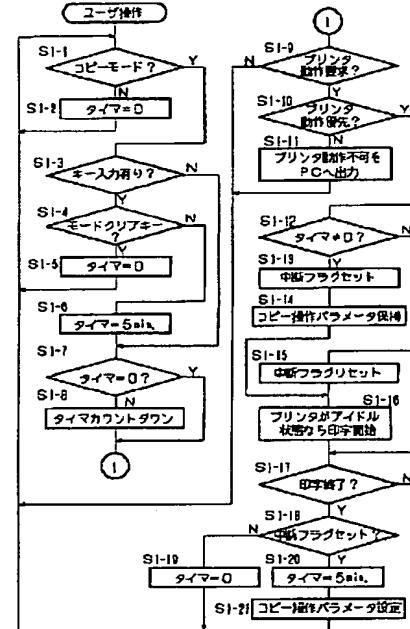
(71) Applicant: RICOH CO LTD
(72) Inventor: MAEMURA KOICHIRO
AIZAWA NAHOKO

(54) DIGITAL MULTI-FUNCTION IMAGE PROCESSING UNIT**(57) Abstract:**

PROBLEM TO BE SOLVED: To take precedence of processing by a copy processing operator over other processing by preventing interrupt of other print output requests than the copy processing during the setting operation for the copy processing.

SOLUTION: In the digital multi-function image processing unit where a printer function, a copy function and a facsimile function are to be used properly, a copy operation input discrimination means (S1-1, S1-3-S1-4) confirms a state of the setting operation for copy processing and on the occurrence of an interrupt print output request other than the copy processing during the setting period, a print-out stop means stops the print-out. Thus, even when the printer is idle, the interrupt print output requests for the setting of the copy processing is prevented to take precedence of the processing by the copy processing operator over other jobs.

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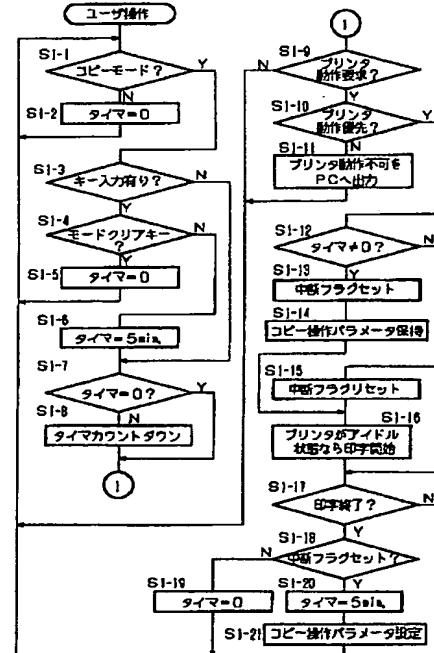
(71)出願人 000006747
株式会社リコー
東京都大田区中馬込1丁目3番6号
(72)発明者 前村 浩一郎
東京都大田区中馬込1丁目3番6号 株式
会社リコー内
(72)発明者 相沢 奈保子
東京都大田区中馬込1丁目3番6号 株式
会社リコー内
(74)代理人 弁理士 柏木 明 (外1名)

(54)【発明の名称】 デジタル多機能画像処理装置

(57)【要約】

【課題】 コピー処理のための設定操作中にコピー処理以外の印字出力要求の割り込みを阻止し、コピー処理操作者による処理を優先させる。

【解決手段】 プリンタ機能とコピー機能とファクシミリ機能とを使い分けるようにしたデジタル多機能画像処理装置において、コピー処理のための設定操作がなされている状態をコピー操作入力判定手段 (S1-1, S1-3 ~ S1-4) によって確認し、この設定の期間中にコピー処理以外の割込印字出力要求があった場合には、印字出力を印字出力停止手段によって停止させるようにした。これにより、プリンタがアイドル状態であってもコピー処理のための設定操作中における割込印字出力要求を阻止し、コピー処理操作者による処理を優先させる。



【特許請求の範囲】

【請求項1】 プリンタとスキャナとモ뎀等を備え、プリンタ機能とコピー機能とファクシミリ機能とを使い分けるようにしたデジタル多機能画像処理装置において、コピー処理のための操作を含む操作を行う操作部と、この操作部によりコピー処理のための設定操作が行われている状態を判定するコピー操作入力判定手段と、コピー処理以外の割込印字出力要求の有無を判定する割込印字出力要求判定手段と、コピー処理のための設定操作が行われている期間中にコピー処理以外の割込印字出力要求があった場合にはその割込印字出力を停止させる印字出力停止手段とを備えることを特徴とするデジタル多機能画像処理装置。

【請求項2】 印字出力停止手段では、コピー処理のための操作が行われている期間中にコピー処理以外の割込印字出力要求があった場合に受信データをメモリに蓄積してこのメモリ内の受信データをコピー終了後にプリンタに出力するようにしたことを特徴とする請求項1記載のデジタル多機能画像処理装置。

【請求項3】 コピー処理以外の割込印字出力要求は、ファクシミリ通信による割込印字出力要求である請求項2記載のデジタル多機能画像処理装置。

【請求項4】 割込印字出力要求判定手段は、ファクシミリの通信履歴や通信中のエラーを自動的に出力するレポート印字出力要求に対しても割込印字出力要求として判定するようにしたことを特徴とする請求項1記載のデジタル多機能画像処理装置。

【請求項5】 プリンタとスキャナとモ뎀等を備え、プリンタ機能とコピー機能とファクシミリ機能とを使い分けるようにしたデジタル多機能画像処理装置において、コピー処理のための操作を含む操作を行う操作部と、コピー処理以外の割込印字出力要求のうち前記プリンタにライセン接続された端末機からのプリンタへの割込印字出力要求の有無を判定する内部割込印字出力要求判定手段と、コピー処理のための設定操作と前記端末機からの印字出力との優先順序を設定する優先順位設定手段と、この優先順位設定手段により前記端末機からの印字出力を優先した設定状態でコピー処理のための設定操作が行われている期間中に前記端末機から割込印字出力要求があった場合には前記端末機から送信されたデータを前記プリンタに出力する印字出力割込手段とを備えることを特徴とするデジタル多機能画像処理装置。

【請求項6】 コピー操作入力判定手段は、コピー処理のための設定操作の入力後の一定期間をコピー操作中として判定することを特徴とする請求項1記載のデジタル多機能画像処理装置。

【請求項7】 操作部によりコピー処理のための設定をクリアしたときにそれまでの設定を無効として判定するコピー設定無効判定手段を備えることを特徴とする請求項1又は6記載のデジタル多機能画像処理装置。

【請求項8】 コピー処理のための設定操作中に端末機からの割込印字出力要求があった場合に、コピー処理中断時点においてコピー操作パラメータを記憶するパラメータ記憶手段と、端末機からの割込印字出力要求による処理を実行した後に前記コピー操作パラメータを読み出して操作部に設定するパラメータ再設定手段とを備えることを特徴とする請求項5記載のデジタル多機能画像処理装置。

【発明の詳細な説明】

10 【0001】

【発明の属する技術分野】 本発明は、デジタル多機能画像処理装置に関する。

【0002】

【従来の技術】 従来、プリンタ、スキャナ、モ뎀等を備え、プリンタ機能とコピー機能とファクシミリ機能とを使い分けるようにしたデジタル多機能画像処理装置がある。このような画像処理装置では、この画像処理装置を操作しているときに、操作者以外の入力によりこの画像処理装置を利用することがある。この場合、プリンタやスキャナ等の資源の使用が時間的に重ならない限り平行動作が行われるように構成されている。例えば、コピー処理中に、ファクシミリの受信をすると、プリンタが実際に動作していないと判断された場合に、ファクシミリの受信データの印字出力要求を受け入れるようにしている。

【0003】

【発明が解決しようとする課題】 しかし、画像処理装置の操作者が、コピー処理のために、コピー枚数の入力、濃度指定の入力、用紙サイズ選択の入力等を設定操作しているときに外部からデータを受信すると、コピースタートボタンを押す前であればプリンタが実際に動作しないものと判断されるため、ファクシミリ受信の印字出力処理が割り込まれてしまう。この場合にはコピー処理が中断されてしまうので、オフィス等の内部利用者にとって不便である。

【0004】

【課題を解決するための手段】 請求項1記載の発明は、プリンタとスキャナとモ뎀等を備え、プリンタ機能とコピー機能とファクシミリ機能とを使い分けるようにし

30 ていているときに外部からデータを受信すると、コピースタートボタンを押す前であればプリンタが実際に動作しないものと判断されるため、ファクシミリ受信の印字出力処理が割り込まれてしまう。この場合にはコピー処理が中断されてしまうので、オフィス等の内部利用者にとって不便である。

【0005】

【課題を解決するための手段】 請求項1記載の発明は、プリンタとスキャナとモ뎀等を備え、プリンタ機能とコピー機能とファクシミリ機能とを使い分けるようにし

40 たデジタル多機能画像処理装置において、コピー処理のための操作を含む操作を行う操作部と、この操作部によりコピー処理のための設定操作が行われている状態を判定するコピー操作入力判定手段と、コピー処理以外の割込印字出力要求の有無を判定する割込印字出力要求判定手段と、コピー処理のための設定操作が行われている期間中にコピー処理以外の割込印字出力要求があった場合にはその割込印字出力を停止させる印字出力停止手段とを備える。従って、コピー処理のための設定操作がなされている状態はコピー操作入力判定手段によって確認される。この設定の期間中にコピー処理以外の割込印字出

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力要求があった場合には、その状態が割込印字出力要求判定手段によって確認され、印字出力が印字出力停止手段によって停止される。

【0005】請求項2記載の発明は、請求項1記載の発明において、印字出力停止手段では、コピー処理のための操作が行われている期間中にコピー処理以外の割込印字出力要求があった場合に受信データをメモリに蓄積してこのメモリ内の受信データをコピー終了後にプリンタに出力するようにした。従って、コピー処理のための設定操作中にコピー処理以外の割込印字出力要求があった場合には、外部からの受信データがメモリに蓄積され、その受信データはコピー終了後に印字出力される。

【0006】請求項3記載の発明では、請求項2記載の発明において、コピー処理以外の割込印字出力要求は、ファクシミリ通信による割込印字出力要求である。従って、コピー処理中にファクシミリによる外部からの割込印字出力要求があった場合には、外部からの受信データがメモリに蓄積されるため、発信者に対して何回も発信をリトライさせることがなくなる。

【0007】請求項4記載の発明は、請求項1記載の発明において、割込印字出力要求判定手段は、ファクシミリの通信履歴や通信中のエラーを自動的に出力するレポート印字出力要求に対しても割込印字出力要求として判定するようにした。従って、コピー処理のための設定操作中にレポート印字出力の要求があった場合でも、コピー処理を優先することが可能となる。

【0008】請求項5記載の発明は、プリンタとスキャナとモデム等を備え、プリンタ機能とコピー機能とファクシミリ機能とを使い分けるようにしたデジタル多機能画像処理装置において、コピー処理のための操作を含む操作を行う操作部と、コピー処理以外の割込印字出力要求のうち前記プリンタにライン接続された端末機からのプリンタへの割込印字出力要求の有無を判定する内部割込印字出力要求判定手段と、コピー処理のための設定操作と前記端末機からの印字出力との優先順序を設定する優先順位設定手段と、この優先順位設定手段により前記端末機からの印字出力を優先した設定状態でコピー処理のための設定操作が行われている期間中に前記端末機から割込印字出力要求があった場合には前記端末機から送信されたデータを前記プリンタに出力する印字出力割込手段とを備える。

【0009】従って、コピー処理中にライン接続された端末機からの割込印字出力要求があった場合に、その割込印字出力要求を優先するか否かは操作者が優先順位設定手段を操作することにより選択可能である。コピー処理のための設定操作がなされている状態はコピー操作入力判定手段によって確認され、この設定の期間中に端末機からの割込印字出力要求があった場合には、その状態が割込印字出力要求判定手段によって確認され、端末機からの印字出力要求を優先されている場合にのみコピー

処理を中断して端末機から転送したデータをプリントアウトすることが可能である。

【0010】請求項6記載の発明は、請求項1記載の発明において、コピー操作入力判定手段は、コピー処理のための設定操作の入力後の一定期間をコピー操作中として判定するようにした。従って、コピー処理のための設定操作を終了してから何の操作もなく一定期間放置されたときは、自動的に初期状態に復帰させることが可能となる。

10 【0011】請求項7記載の発明は、請求項1又は6記載の発明において、操作部によりコピー処理のための設定をクリアしたときにそれまでの設定を無効として判定するコピー設定無効判定手段を備える。従って、コピー処理のための設定操作中或いは設定操作終了後に、その設定をクリアした場合にはコピー設定無効判定手段がそれまでの設定を無効にする。これにより、直ちに外部からの割込印字出力要求に対しても待機状態に維持させることができるとなる。

【0012】請求項8記載の発明は、請求項5記載の発明において、コピー処理のための設定操作中に端末機からの割込印字出力要求があった場合に、コピー処理中断時点においてコピー操作パラメータを記憶するパラメータ記憶手段と、端末機からの内部割込印字出力要求による処理を実行した後に前記コピー操作パラメータを読み出して操作部に設定するパラメータ再設定手段とを備える。従って、コピー処理を中断して端末機からの割込印字出力要求を受け入れて印字出力を終了したときに、それ以前に設定されたコピー操作パラメータに基づいて直ちにコピー処理に移行することが可能となる。

30 【0013】
【発明の実施の形態】本発明の実施の第一の形態を図1ないし図5に基づいて説明する。まず、図4を参照してデジタル多機能画像処理装置の構造について説明する。1は装置本体である。この装置本体1の上部には原稿の画像を読み取るスキャナ2が装着され、内部には用紙搬送路4を搬送される転写用紙に印字出力するプリンタPが設けられている。

【0014】前記スキャナ2は、原稿画像を読み取る読取部5と、この読取部5に供給する原稿を載置する原稿トレイ6とを有し、この原稿トレイ6は、支点軸7を中心位置から仮想線Bで示す位置まで上方に回動し得るように支持されている。なお、原稿トレイ6は図示しないストッパにより水平位置と仮想線Bで示す位置まで安定するよう構成されている。

【0015】前記プリンタPのプロセスカートリッジ3は、ケース状に形成されたユニット本体8に、感光体9を回転自在に設けるとともに、帶電部材10と現像部11と転写部12とを感光体9の周囲に配置して取り付けることにより形成されている。現像部11は、前記ユニット本体8に一体に形成された現像剤容器13と、この

現像剤容器13の内部に収納された現像剤を搅拌する回転自在の搅拌器14と、感光体9に接触する現像ローラ15と、この現像ローラ15に現像剤を供給する供給ローラ16と、現像ローラ15に接触されたブレード17とを有する。さらに、プロセスカートリッジ3の上部には、画像信号に基づいて変調されたレーザ光を感光体9の帯電部分に走査することにより静電潜像を形成する潜像形成部18が設けられている。

【0016】また、前記装置本体1の一側には、前記スキャナ2により読み取られた原稿を支持するとともに、転写用紙Sを斜めに載置状態で支えるトレイ19が設けられ、このトレイ19の下方には、回転駆動される給紙ローラ20と、一方向に付勢されてトレイ19上の転写用紙Sを給紙ローラ20に圧接する押圧板21と、それぞれ給紙ローラ20に弾性的に接触することにより転写用紙Sの重送を阻止する分離パッド22及び分離ローラ23とが設けられている。

【0017】給紙ローラ20、分離パッド22、分離ローラ23は前記用紙搬送路4の入口側に配置されている。この用紙搬送路4には、給紙ローラ20よりも下流側に位置するボトムバス24が連通されている。さらに、用紙搬送路4の下流側には、転写用紙S上に転写された画像を定着する定着部25が配置されている。

【0018】さらに、前記装置本体1には、定着部25の上方と前記原稿トレイ6との間に配置された用紙スタッカ26が形成されている。この用紙スタッカ26は、原稿トレイ6を仮想線B上に回動させたときに、その原稿トレイ6の延長面上に位置して転写用紙Sを支える受け板27を有している。さらに、トレイ19とは反対側の装置本体1の側面付近には、定着部25から排紙された転写用紙Sを水平方向に排紙する排紙口28と、定着部25から排紙された転写用紙Sを反転させて用紙スタッカ26に導く反転排紙路29とが形成されている。この反転排紙路29の上部と下部とには、それぞれ対をなす排紙ローラ30が配置され、また、反転排紙路29と排紙口28との分歧点には、転写用紙Sの排出方向を切り替える切替爪31が回動自在に設けられている。

【0019】図3に示すように、装置本体1は給紙装置32の上に載置され、前記給紙トレイ19内の転写用紙の他に給紙装置32内の転写用紙を使用することが可能である。また、前記スキャナ2の外筐には、パネル状の操作部33が設けられている。この操作部33は、コピーモードを選択した場合には、コピー枚数、転写用紙のサイズ指定、コピーの縮尺等の設定を行い、ファクシミリモードを選択した場合には送信先の電話番号を入力したりする機能を備えている。

【0020】次に、図5を参照して電子回路について説明する。プログラム等の固定データが書き込まれたROM34、各部の動作を監視してROM34に書き込まれたプログラムを実行するCPU35、ワークデータ等の

可変データを書き替え自在に書き込むRAM36、前記スキャナ2、印字出力するデータを格納するメモリ37、前記操作部33、前記プリンタP、画像処理部38、パーソナルコンピュータ(以下PCと称する)等の端末機を接続するPCインターフェース(I/F部)39、モデム40、網制御部41等がシステムバス42によって接続されている。なお、メモリ37に格納されるデータとは、スキャナ2により読み取ったデータ、PCから転送されたデータ、電話回線を介して外部から受信した受信データ等である。

【0021】このような構成において、原稿の画像を読み取る場合には、図4に実線で示すように、原稿トレイ6を水平状態に維持して原稿を読取部5に供給する。供給された原稿は読取部5により画像が読み取られ、トレイ19の上部に立てかけ状態で支持される。このようにして読み取った画像は、外部に送信(ファクシミリの送信モードとしての使用形態)し、或いは、トレイ19から転写用紙Sを給紙してこの転写用紙Sに読取画像を印字(複写機としての使用形態)することができる。或いは、外部から送信された画像を転写用紙Sに印字(ファクシミリの受信モードとしての使用形態)することができる。さらに、デジタル多機能画像処理装置は、PCインターフェース(I/F部)39にPCを接続し、このPCからのデータをプリントアウトするプリンタとして使用することができる。

【0022】印字の場合は、図4において、感光体9を時計方向に回転させる過程でその表面を帯電部材10により帯電し、原稿の読取画像又は外部から受信した画像に基づいて潜像形成部18によって感光体9の帯電部分に静電潜像が形成される。この静電潜像は現像部11により現像される。この現像画像は、給紙ローラ20によりトレイ19から給紙された転写用紙Sに転写される。画像が転写された転写用紙Sは定着部25を通過するときに定着され、切替爪31の向きによって排紙口28又は用紙スタッカ26に排紙される。

【0023】ここで、コピー処理におけるユーザ操作の処理を図1のフローチャートを参照して説明する。ステップS1-1は、デジタル多機能画像処理装置を直接使用する操作者が操作部33を用いてコピーモードを設定したか否かを判断するステップで、コピーモードでないと判断したときはタイマをクリアし(ステップS1-2)、ステップS1-1に戻る。ステップS1-1でコピーモードであると判断した場合はステップS1-3に移行し、操作部33からのキー入力の有無を判断する。このステップS1-3では、コピー枚数、転写用紙サイズ、印字濃度、コピーの縮尺等のコピー操作パラメータを設定するためのキーを入力したか否かを判断するステップで、キー入力有りと判断し、そのキーがモードクリアキーであると判断した(ステップS1-4 YES)ときは、タイマをクリアし(ステップS1-5)、ステ

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ツップS1-1に戻る。後述するように、操作者がコピー操作を行うとタイマが所定値に設定されるので、ステップS1-2, S1-5における「タイマ=0」は、操作者がコピー操作を行っていないことを意味する。

【0024】ステップS1-4において入力したキーがモードクリアキーでないと判断したことは、コピーモードが維持された状態で、コピー枚数、転写用紙サイズ、印字濃度、コピーの縮尺等のコピー操作パラメータがキーワードにより設定されたことを意味する。

【0025】コピーモードが設定されても（ステップS1-1 YES）、コピー操作パラメータのキー入力がない場合（ステップS1-3 NO）は、タイマの設定が行われず、タイマ=0のままである（ステップS1-7 YES）。したがって、プリンタの動作要求がなければ（ステップS1-9 NO）、ステップS1-1

YES→ステップS1-3 NO→ステップS1-7
YES→ステップS1-9 NOのループを繰り返す。

【0026】また、コピーモードが設定された後（ステップS1-1 YES）、通常のコピー操作パラメータのキー入力がある場合（ステップS1-3 YES→ステップS1-4 NO）は、タイマを設定し（ステップS1-6）、タイマのカウントダウンを開始する（ステップS1-7 NO→ステップS1-8）。したがって、プリンタの動作要求がなければ（ステップS1-9 NO）、モードクリア以外の通常のコピー操作パラメータのキー入力がある限り（ステップS1-3 YES→ステップS1-4 NO）、ステップS1-6のタイマの設定と、ステップS1-8のタイマカウントダウンを繰り返す。すなわち、タイマ≠0は、操作者がコピー操作中であることを意味する。この場合、タイマに設定する時間は、操作者がコピー操作を終えるであろうと推測される時間として5分間設けているが、これは一例であって他の値を設定するようにしてもよい。

【0027】ステップS1-9において、PCからのプリンタ動作の要求有りと判定したときは、続いてコピー処理以外でのプリンタPの駆動を優先するか否かを判断する（ステップS1-10）。その優先順位を設定するための優先順位設定手段は、PC等の端末機の画面上で対話方式により優先順位を選択するようにしてもよく、或いは、デジタル多機能画像処理装置側の操作部33のキーにより優先順位を選択するようにしてもよい。

【0028】プリンタ動作優先が否定されている場合（ステップS1-10 NO）には、プリンタ動作不可の旨の信号をPCに出力する（ステップS1-11）。このプリンタ動作不可の信号を受けたPCの画面上にはプリントエラーが表示され、これを見た操作者が再要求等の必要な処理をPCから行う。ステップS1-11の処理の後は、ステップS1-1に移行するが、プリンタ動作優先が選択されているときは（ステップS1-10

10 YES）、PCからのデータをプリンタPに出力するに際してタイマ値を確認する（ステップS1-12）。つまり、PCからのデータをプリンタPに出力するに際し、ステップS1-6で設定したタイマ値が0でなければ、換言すれば、タイマを設定した後5分を経過しないければ（S1-12 YES）、現在操作者がコピー処理中であると判断するため、これから開始するPCからのデータをプリンタPに出力することによってコピー処理が中断されると判断し、中断フラグをセットし（ステップS1-13）、それ以前にステップS1-3において入力されたコピー枚数、転写用紙サイズ、印字濃度、コピーの縮尺等のコピー操作パラメータをRAM36等に記憶する（ステップS1-14）。逆にタイマ値が0であれば（S1-12 NO）、PCからのデータをプリンタPに出力するに際してコピー処理が中断されないものと判断し、中断フラグをリセットする（ステップS1-15）。

【0029】このように、PCからの要求によりデータをプリンタPに出力する場合は、コピー処理を中断、非20 中断に拘らず、プリンタPがアイドル状態なら印字を開始する（ステップS1-16）。続いて、ステップS1-17において、印字動作終了と判断した後に、中断フラグのセット状態を判断し（ステップS1-18）、このステップで中断フラグがセットされていない場合（ステップS1-18 NO）は、操作者によるコピー操作の中止が発生していないため、タイマをクリアした後（ステップS1-19）、ステップS1-1に戻る。中断フラグがセットされている場合（ステップS1-18

YES）は、コピー処理が中断されたことを意味する30 ので、コピー処理を続行するためにタイマを設定し（ステップS1-20）、ステップS1-14において記憶したコピー操作パラメータを呼び出し、操作部33に設定し（ステップS1-21）、ステップS1-1に戻る。

【0030】このように、コピー処理と、PCからのデータの出力とを行う場合に、両者の優先順序を操作部33から選択することができる。また、コピー処理を中断してPCからのデータを出力する動作を優先した場合には、コピー枚数、転写用紙サイズ、印字濃度、コピーの40 縮尺等のコピー操作パラメータを呼び出して再設定することが自動的になされるため、コピー操作パラメータを操作者の手で再度設定する必要がなく、操作者の負担を軽減することができる。

【0031】なお、PC等の端末機は、本発明のデジタル多機能画像処理装置と併用可能な範囲でライン接続されたもので、電話回線を介して接続するものは含まない。

【0032】次に、コピー処理以外の割込印字出力要求のうち、外部要因（ファクシミリ受信）による割込印字50 出力要求に対する処理を図2を参照して説明する。デジ

タル多機能画像処理装置ではファクシミリの受信状態を監視しており（ステップS2-1）、ファクシミリの受信が開始（割込印字出力要求）されたときは、前述したタイマの状態を確認（ステップS2-2）し、タイマが0でないと判断したときは、メモリ受信を開始する。すなわち、外部からの受信データをメモリ37に蓄積（ステップS2-3）し、タイマが0の場合にはコピーモードではないので、プリンタPがアイドル状態ならプリンタPに印字出力しながら受信を開始（ステップS2-4）する。

【0033】また、ファクシミリの通信履歴や通信中のエラーを自動的に出力するレポート印字出力要求を受けることがある。このような自動割込印字出力要求有りと判断した場合（ステップS2-5）には、タイマの状態を確認（ステップS2-6）し、タイマが0でない場合はステップS2-1に戻り、タイマが0の場合にはコピーモードではないので、プリンタPがアイドル状態ならプリンタPに印字出力しながら受信を開始（ステップS2-7）する。

【0034】ここで、請求項における構成要件となる各手段の構成をフローチャート上の処理と結びつけて説明する。コピー処理のための設定操作が行われている状態を判定するコピー操作入力判定手段は、ステップS1-1、S1-3～S1-4に相当する。

【0035】コピー処理以外の割込印字出力要求の有無を判定する割込印字出力要求判定手段は、ステップS1-9、S2-1、S2-5に相当する。コピー処理のための設定操作が行われている期間中にコピー処理以外の割込印字出力要求があった場合にはその割込印字出力を停止させる印字出力停止手段は、ステップS1-10、S1-11に相当する。なお、コピー処理のための設定操作が行われている期間中であるか否かは、ステップS1-7におけるタイマ値の確認で判断される。プリンタPにライン接続された端末機からこのプリンタPに対する割込印字出力要求の割り込みの有無を判定する内部割込印字出力要求判定手段は、ステップS1-9に相当する。優先順位設定手段は、操作部33或いは端末機からの入力により実現される。この優先順位設定手段により端末機からの印字出力を優先した状態でコピー処理のための設定操作が行われている期間中に端末機から割込印字出力要求があった場合には端末機から送信されたデータをプリンタPに出力する印字出力割込手段は、ステップS1-15、S1-16に相当する。なお、コピー処理のための設定操作が行われている期間中であるか否かは、ステップS1-12におけるタイマ値の確認で判断される。操作部33によりコピー処理のための設定をクリアしたときにそれまでの設定を無効として判定するコピー設定無効判定手段は、ステップS1-5に相当する。コピー処理のための設定操作中に端末機からの割込印字出力要求があった場合に、コピー処理中断時点にお

いてコピー操作パラメータを記憶するパラメータ記憶手段は、ステップS1-14に相当する。端末機からの内部割込印字出力要求による処理を実行した後にコピー操作パラメータを読み出して操作部に設定するパラメータ再設定手段は、ステップS1-21に相当する。

【0036】次に、本発明の実施の第二の形態について説明する。本実施の形態は、ブック型のデジタル多機能画像処理装置に適用した例である。前実施の形態において説明した部分と同一部分は同一符号を用い説明も省略する。

10 図6に示すように、デジタル多機能画像処理装置の装置本体51の上部にはブック型のスキャナ52が設けられ、内部には用紙搬送路4を搬送される転写用紙に印字出力するプリンタPが設けられている。

【0037】前記スキャナ52のスキャナ本体53は、装置本体51の上面を開放し得るように支軸54により上下回動自在に支持されている。スキャナ本体53の内部には画像を読み取る走査可能な読取部55が設けられ、上面には原稿を載置するコンタクトガラス56が設けられ、このコンタクトガラス56上の原稿を押える開閉自在の押え板57が設けられている。この押え板57には、原稿を積載する原稿トレイ58が形成されているとともに、この原稿トレイ58上の原稿を後方（図6において右方向）に搬送する複数のローラ59が設けられている。また、スキャナ本体53の手前側（図6において左方向）の上面には前実施の形態と同様の操作部33が設けられている。

【0038】このようなスキャナ52は、コンタクトガラス56の上面に原稿を置き、これを押え板57で押えて固定し、読取部55をコンタクトガラス56に沿って走査して画像を読み取る読み取り形式と、読取部55を所定の位置で静止させ、原稿トレイ58に積載した原稿をローラ59で搬送し送りながら画像を読み取る読み取り形式とを選択できるように構成されている。

【0039】装置本体51の後部には印字する転写用紙を支持するトレイ19が設けられ、反対側の前部には排紙トレイ60が形成されている。プリンタPは、前実施の形態と同様の構成をもって装置本体51の内部に設けられている。すなわち、感光体9の表面に潜像を潜像形成部18により形成し、その潜像を現像部11で現像し、トレイ19から給紙した転写用紙に感光体9上の現像画像を転写部12により転写し、その転写画像を定着部25により定着し、定着した転写用紙を排紙ローラ30により排紙トレイ60に排紙するように構成されている。

【0040】このようなデジタル多機能画像処理装置を制御する電子回路は、基本的に図5を参照して説明した電子回路と同様で、スキャナ52で読み取った画像は、外部に送信（ファクシミリの送信モードとしての使用形態）し、或いは、トレイ19から転写用紙を給紙してこの転写用紙に読み取った画像を印字（複写機としての使用形

態)することができる。或いは、外部から送信された画像を転写用紙に印字(ファクシミリの受信モードとしての使用形態)することができる。さらに、ライン接続したPCからのデータをプリントアウトするプリンタとして使用することができる。

【0041】

【発明の効果】請求項1記載の発明は、プリンタ機能とコピー機能とファクシミリ機能を使い分けるようにしたデジタル多機能画像処理装置において、コピー処理のための操作を含む操作を行う操作部と、この操作部によりコピー処理のための設定操作が行われている状態を判定するコピー操作入力判定手段と、コピー処理以外の割込印字出力要求の有無を判定する割込印字出力要求判定手段と、コピー処理のための設定操作が行われている期間中にコピー処理以外の割込印字出力要求があった場合にはその割込印字出力を停止させる印字出力停止手段とを備えるので、コピー処理のための設定操作がなされている状態では、プリンタがアイドル状態であってもコピー処理以外の割込印字出力要求を阻止し、コピー操作者の処理を優先させることができる。

【0042】請求項2記載の発明は、請求項1記載の発明において、印字出力停止手段では、コピー処理のための操作が行われている期間中にコピー処理以外の割込印字出力要求があった場合に受信データをメモリに蓄積してこのメモリ内の受信データをコピー終了後にプリンタに出力するようにしたので、コピー処理のための設定操作中にコピー処理以外の割込印字出力要求があった場合には、コピー処理が終了するまで外部からの受信データをメモリに蓄積し、その受信データをコピー終了後にに出力することができる。

【0043】請求項3記載の発明では、請求項2記載の発明において、コピー処理以外の割込印字出力要求は、ファクシミリ通信による割込印字出力要求であるので、コピー処理中にファクシミリによる外部からの割込印字出力要求があった場合には、外部からの受信データがメモリに蓄積されるため、発信者に対して何回も発信をリトライさせることがなくなる。

【0044】請求項4記載の発明は、請求項1記載の発明において、割込印字出力要求判定手段は、ファクシミリの通信履歴や通信中のエラーを自動的に出力するレポート印字出力要求に対しても割込印字出力要求として判定するようにしたので、コピー処理のための設定操作中にレポート印字出力の要求があった場合でも、コピー処理を優先することができる。

【0045】請求項5記載の発明は、プリンタとスキャナとモデム等を備え、プリンタ機能とコピー機能とファクシミリ機能を使い分けるようにしたデジタル多機能画像処理装置において、コピー処理のための操作を含む操作を行う操作部と、コピー処理以外の割込印字出力要求のうち前記プリンタにライン接続された端末機からの

プリンタへの割込印字出力要求の有無を判定する内部割込印字出力要求判定手段と、コピー処理のための設定操作と前記端末機からの印字出力との優先順序を設定する優先順位設定手段と、この優先順位設定手段により前記端末機からの印字出力を優先した設定状態でコピー処理のための設定操作が行われている期間中に前記端末機から割込印字出力要求があった場合には前記端末機から送信されたデータを前記プリンタに出力する印字出力割込手段とを備えるので、コピー処理中にライン接続された端末機からの印字出力要求があった場合に、その印字出力要求を優先するか否かは操作者が優先順位設定手段を操作することにより選択することができる。したがって、コピー処理のための設定操作がなされている期間中に端末機から割込印字出力要求があった場合には、端末機からの印字出力要求が優先されている場合にのみコピー処理を中断して端末機から転送したデータをプリントアウトすることができる。

【0046】請求項6記載の発明は、請求項1記載の発明において、コピー操作入力判定手段は、コピー処理のための設定操作の入力後の一定期間をコピー操作中として判定するようにしたので、コピー処理のための設定操作を終了してから何の操作もなく一定期間放置されたときは、自動的に初期状態に復帰することができる。

【0047】請求項7記載の発明は、請求項1又は6記載の発明において、操作部によりコピー処理のための設定をクリアしたときにそれまでの設定を無効として判定するコピー設定無効判定手段を備えるので、コピー処理のための設定操作中或いは設定操作終了後に、その設定をクリアした場合にはコピー設定無効判定手段によりそれまでの設定を無効にすることができる。これにより、直ちに外部からの割込印字出力要求に対して待機状態に維持させることができる。

【0048】請求項8記載の発明は、請求項5記載の発明において、コピー処理のための設定操作中に端末機からの割込印字出力要求があった場合に、コピー処理中断時点においてコピー操作パラメータを記憶するパラメータ記憶手段と、端末機からの内部割込印字出力要求による処理を実行した後に前記コピー操作パラメータを読み出して操作部に設定するパラメータ再設定手段とを備えるので、コピー処理を中断して端末機からの割込印字出力要求を受け入れて印字出力を終了したときに、操作者自身の手でコピー条件を示すコピー操作パラメータを入力し直すことなく、それ以前に設定されたコピー操作パラメータに基づいて直ちにコピー処理に移行することができる。

【図面の簡単な説明】

【図1】本発明の実施の第一の形態におけるユーザ操作処理を示すフローチャートである。

【図2】外部要因による割込印字出力要求に対する処理を示すフローチャートである。

【図3】デジタル多機能画像処理装置の外観を示す斜視図である。

【図4】デジタル多機能画像処理装置の内部構造を示す縦断側面図である。

【図5】電子回路を示すブロック図である。

【図6】本発明の実施の第二の形態におけるデジタル多機能画像処理装置を示す縦断側面図である。

【符号の説明】

P プリンタ

2 スキャナ

3 3 操作部、優先順位設定手段

3 7 メモリ

* 4 0 モデム

S 1 - 1, S 1 - 3 ~ S 1 - 4 コピー操作入力判定手段

S 1 - 5 コピー設定無効判定手段

S 1 - 9 内部割込印字出力要求判定手段

S 1 - 9, S 2 - 1, S 2 - 5 割込印字出力要求判定手段

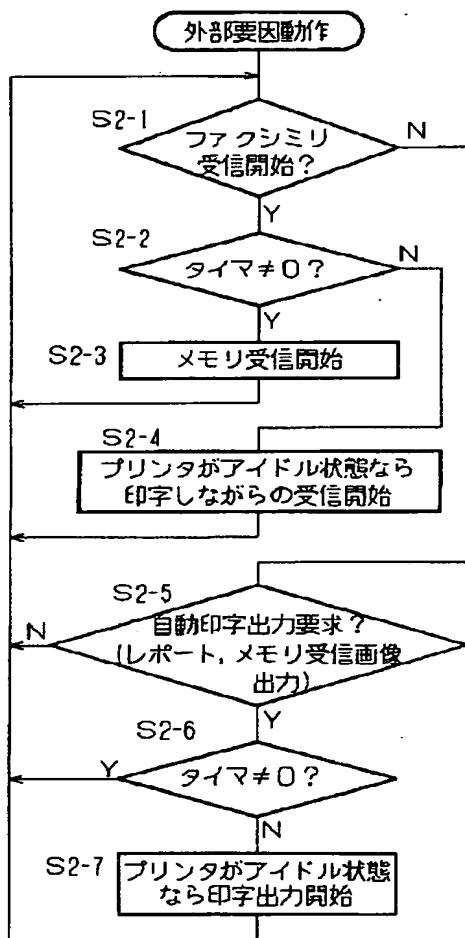
S 1 - 15, S 1 - 16, S 1 - 12 印字出力割込手段

10 S 1 - 10, S 1 - 11, S 1 - 7 印字出力停止手段

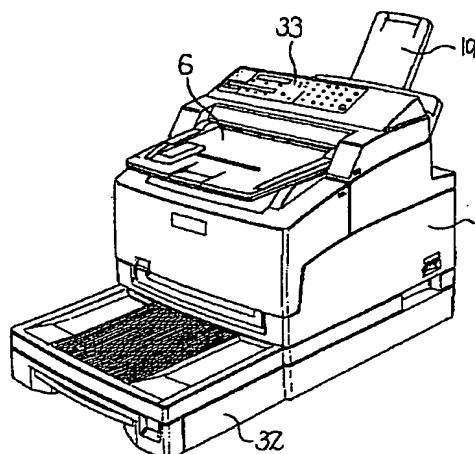
S 1 - 14 コピー操作パラメータ記憶手段

* S 1 - 21 パラメータ再設定手段

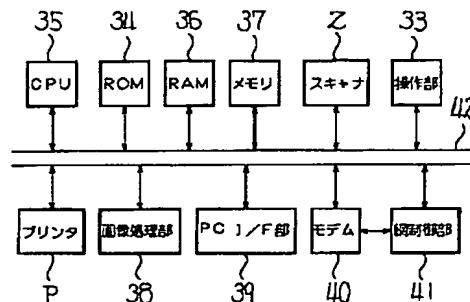
【図2】



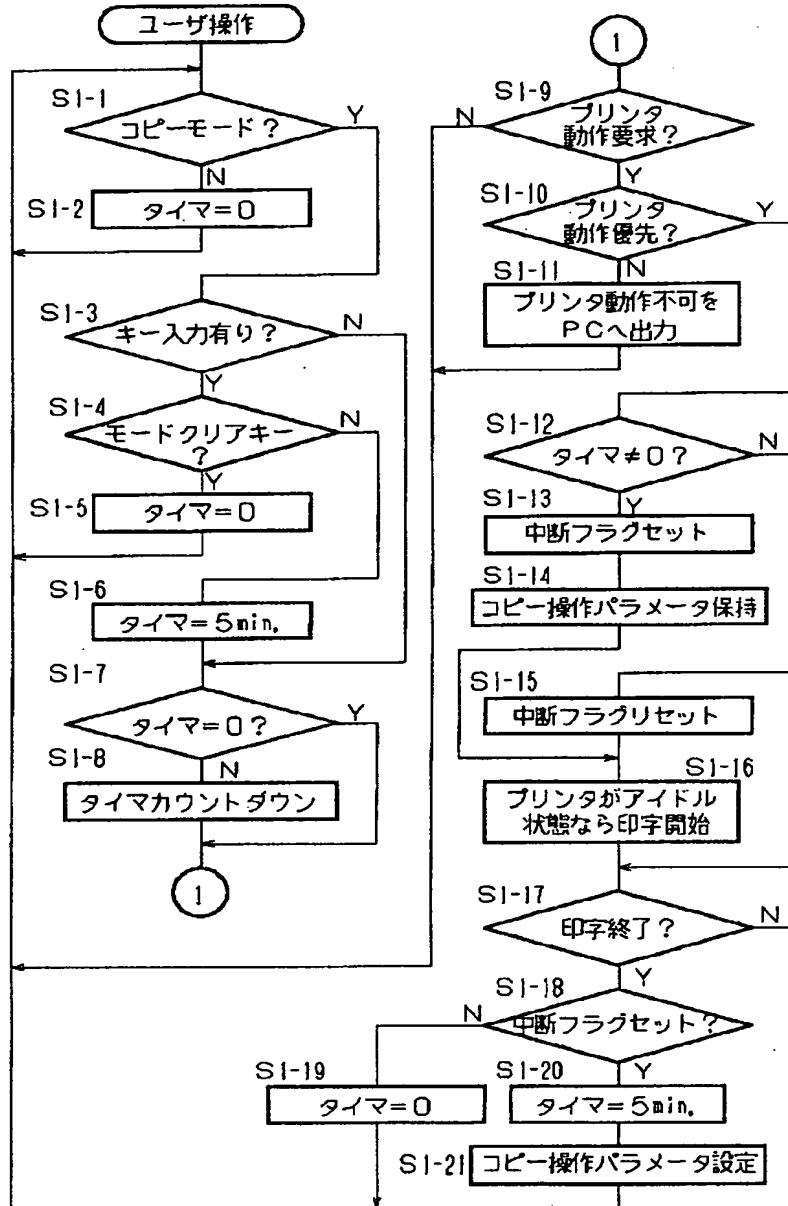
【図3】



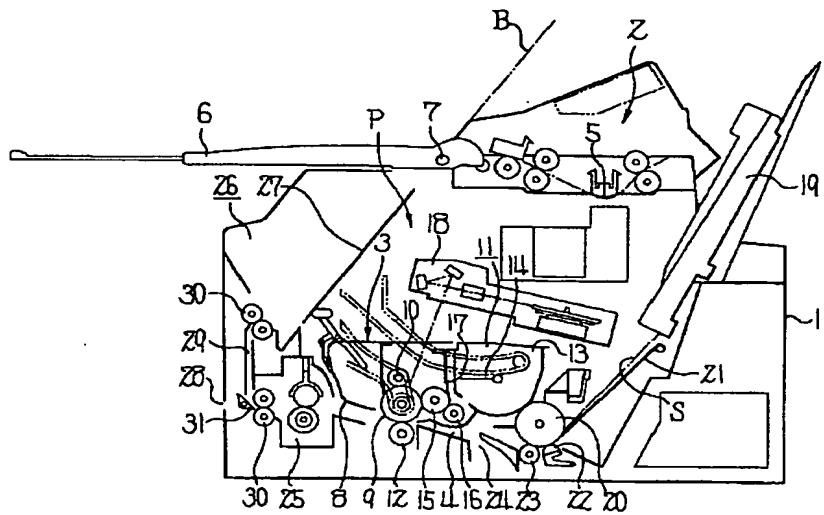
【図5】



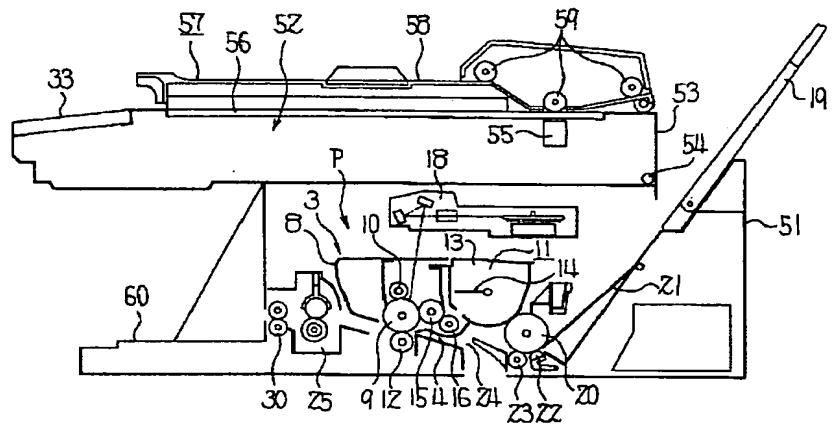
【図1】



【図4】



【図6】



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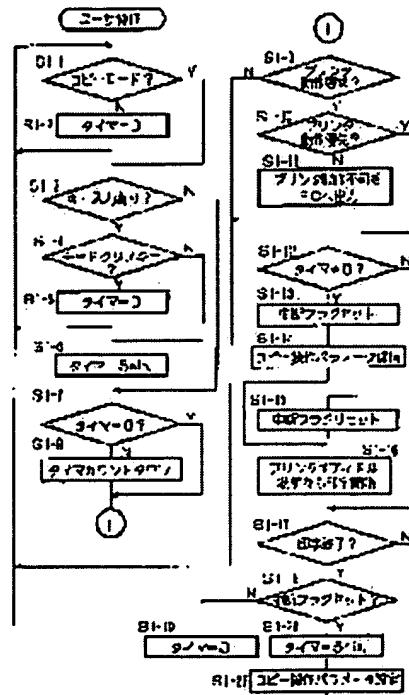
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(54) DIGITAL MULTI-FUNCTION IMAGE PROCESSING UNIT

(57) Abstract:

PROBLEM TO BE SOLVED: To take precedence of processing by a copy processing operator over other processing by preventing interrupt of other print output requests than the copy processing during the setting operation for the copy processing.

SOLUTION: In the digital multi-function image processing unit where a printer function, a copy function and a facsimile function are to be used properly, a copy operation input discrimination means (S1-1, S1-3-S1-4) confirms a state of the setting operation for copy processing and on the occurrence of an interrupt print output request other than the copy processing during the setting period, a print-out stop means stops the print-out. Thus, even when the printer is idle, the interrupt print output requests for the setting of the copy processing is prevented to take precedence of the processing by the copy processing operator over other jobs.



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CLAIMS

[Claim(s)]

[Claim 1] In the digital multifunctional image processing system which is equipped with a printer, a scanner, a modem, etc. and used printer ability, the copy function, and the facsimile function properly. The control unit which performs actuation including the actuation for copy processing, and a copy actuation input judging means to judge the condition that setting actuation for copy processing is performed by this control unit. An interrupt printout demand judging means to judge the existence of interrupt printout demands other than copy processing. The digital multifunctional image processing system characterized by having the printout means for stopping which stops the interrupt printout when interrupt printout demands other than copy processing are during the period when setting actuation for copy processing is performed.

[Claim 2] The digital multifunctional image processing system according to claim 1 characterized by accumulating received data in memory and making it output the received data in this memory to a printer after copy termination when interrupt printout demands other than copy processing are during the period when actuation for copy processing is performed in a printout means for stopping.

[Claim 3] Interrupt printout demands other than copy processing are digital multifunctional image processing systems according to claim 2 which are the interrupt printout demand by facsimile communication.

[Claim 4] An interrupt printout demand judging means is a digital multifunctional image processing system according to claim 1 characterized by judging the communication link hysteresis of facsimile, and the error under communication link as an interrupt printout demand also to the report printout demand outputted automatically.

[Claim 5] In the digital multifunctional image processing system which is equipped with a printer, a scanner, a modem, etc. and used printer ability, the copy function, and the facsimile function properly. An internal-interruption printout demand judging means to judge the existence of an interrupt printout demand to the printer from the terminal by which Rhine connection was made to said printer among the control unit which performs actuation including the actuation for copy processing, and interrupt printout demands other than copy processing. A priority setting means to set up the priority foreword of the setting actuation for copy processing, and the printout from said terminal. With this priority setting means The printout from said terminal The digital multifunctional image processing system characterized by having a printout interrupt means to output the data transmitted from said terminal when an interrupt printout demand was during the period when setting actuation for copy processing is performed by the established state to which priority was given from said terminal to said printer.

[Claim 6] A copy actuation input judging means is a digital multifunctional image processing system according to claim 1 characterized by judging a fixed period after the input of the setting actuation for copy processing as under copy actuation.

[Claim 7] The digital multifunctional image processing system according to claim 1 or 6 characterized by having a copy setting invalid judging means to judge the setup till then as an invalid when a setup for copy processing is cleared by the control unit.

[Claim 8] The digital multifunctional image processing system according to claim 5 carry out having a parameter storage means memorize a copy operation parameter at the copy processing interruption time, and a parameter resetting means read said copy operation parameter and set up to a control unit after performing processing by the interrupt printout demand from a terminal when the interrupt printout demand from a terminal is during the setting actuation for copy processing as the description.

[Translation done.]

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DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[Field of the Invention] This invention relates to a digital multifunctional image processing system.

[0002]

[Description of the Prior Art] Conventionally, it has a printer, a scanner, a modem, etc. and there is a digital multifunctional image processing system which used printer ability, the copy function, and the facsimile function properly. In such an image processing system, while operating this image processing system, this image processing system may be used by the input of those other than an operator. In this case, unless use of resources, such as a printer and a scanner, laps in time, it is constituted so that parallel actuation may be performed. For example, when facsimile was received and a printer is judged not to actually operate, he is trying to accept the printout demand of the received data of facsimile during copy processing.

[0003]

[Problem(s) to be Solved by the Invention] However, since a printer will be judged to be what does not actually operate if data are received from the exterior while carrying out setting actuation of the input of copy number of sheets, the input of concentration assignment, the input of paper-size selection, etc. for copy processing of the operator of an image processing system, and it is before pushing a copy start button, printout processing of facsimile reception will be interrupted. In this case, since copy processing will be interrupted, it is inconvenient for internal users, such as office.

[0004]

[Means for Solving the Problem] In the digital multifunctional image processing system which invention according to claim 1 is equipped with a printer, a scanner, a modem, etc., and used printer ability, the copy function, and the facsimile function properly. The control unit which performs actuation including the actuation for copy processing, and a copy actuation input judging means to judge the condition that setting actuation for copy processing is performed by this control unit. When interrupt printout demands other than copy processing are during an interrupt printout demand judging means to judge the existence of interrupt printout demands other than copy processing, and the period when setting actuation for copy processing is performed, it has the printout means for stopping which stops the interrupt printout.

Therefore, the condition that the setting actuation for copy processing is made is checked by the copy actuation input judging means. When interrupt printout demands other than copy processing are during the period of this setup, that condition is checked by the interrupt printout demand judging means, and a printout is suspended by the printout means for stopping.

[0005] When interrupt printout demands other than copy processing were during the period when actuation for copy processing is performed, invention according to claim 2 accumulates received data in memory, and it was made to output the received data in this memory to a printer after copy termination by the printout means for stopping in invention according to claim 1. Therefore, when interrupt printout demands other than copy processing are during the setting actuation for copy processing, the received data from the outside are accumulated in memory, and the printout of the received data is carried out

after copy termination.

[0006] In invention according to claim 3, interrupt printout demands other than copy processing are interrupt printout demands by facsimile communication in invention according to claim 2. Therefore, since the received data from the outside are accumulated in memory when the interrupt printout demand from the outside by facsimile is during copy processing, carrying out the retry of the dispatch repeatedly to an addresser is lost.

[0007] Invention according to claim 4 judged the interrupt printout demand judging means as an interrupt printout demand in invention according to claim 1 also to the report printout demand which outputs automatically the communication link hysteresis of facsimile, and the error under communication link. Therefore, even when the demand of a report printout is during the setting actuation for copy processing, it becomes possible to give priority to copy processing.

[0008] In the digital multifunctional image processing system which invention according to claim 5 is equipped with a printer, a scanner, a modem, etc., and used printer ability, the copy function, and the facsimile function properly An internal-interruption printout demand judging means to judge the existence of an interrupt printout demand to the printer from the terminal by which Rhine connection was made to said printer among the control unit which performs actuation including the actuation for copy processing, and interrupt printout demands other than copy processing, A priority setting means to set up the priority foreword of the setting actuation for copy processing, and the printout from said terminal, With this priority setting means When an interrupt printout demand is during the period when setting actuation for copy processing is performed by the established state which gave priority to the printout from said terminal from said terminal, it has a printout interrupt means to output the data transmitted from said terminal to said printer.

[0009] Therefore, when the interrupt printout demand from a terminal by which Rhine connection was made is during copy processing, it is selectable whether priority is given to the interrupt printout demand, when an operator operates a priority setting means. It is possible in printing out the data that condition was checked by the interrupt printout demand judging means when the condition that the setting actuation for copy processing is made was checked by the copy actuation input judging means and the interrupt printout demand from a terminal was during the period of this setup, copy processing was interrupted only when priority is given to the printout demand from a terminal, and transmitted from a terminal.

[0010] As for the copy actuation input judging means, invention according to claim 6 judged a fixed period after the input of the setting actuation for copy processing as under copy actuation in invention according to claim 1. Therefore, after ending the setting actuation for copy processing, when there is also no actuation of what and fixed period neglect is carried out, it becomes possible to make it return to an initial state automatically.

[0011] In invention according to claim 1 or 6, invention according to claim 7 is equipped with a copy setting invalid judging means to judge the setup till then as an invalid, when a setup for copy processing is cleared by the control unit. Therefore, when the setup is cleared during the setting actuation for copy processing, or after setting actuation termination, a copy setting invalid judging means makes the setup till then an invalid. Thereby, it becomes possible to maintain a standby condition to the interrupt printout demand from the outside immediately.

[0012] In invention according to claim 5, invention according to claim 8 has a parameter storage means memorize a copy operation parameter at the copy processing interruption time, and a parameter resetting means read in said copy operation parameter and set up to a control unit after performing processing by the internal-interruption printout demand from a terminal, when the interrupt printout demand from a terminal is during the setting actuation for copy processing. Therefore, when copy processing is interrupted, the interrupt printout demand from a terminal is accepted and a printout is ended, it becomes possible to shift to copy processing immediately based on the copy operation parameter set up before it.

[0013]

[Embodiment of the Invention] The first gestalt of operation of this invention is explained based on drawing 1 thru/or drawing 5. First, with reference to drawing 4, the structure of a digital

multifunctional image processing system is explained. 1 is a body of equipment. The upper part of this body 1 of equipment is equipped with the scanner 2 which reads the image of a manuscript, and the printer P which carries out a printout to the imprint form which has the form conveyance way 4 conveyed is formed in the interior.

[0014] Said scanner 2 has the read station 5 which reads a manuscript image, and the manuscript tray 6 which lays the manuscript supplied to this read station 5, and this manuscript tray 6 is supported so that it may rotate up to the location shown by the imaginary line B from a horizontal position centering on a rocking lever shaft 7. In addition, the manuscript tray 6 is constituted so that it may be stabilized in the location shown by the horizontal position and the imaginary line B with the stopper which is not illustrated.

[0015] The process cartridge 3 of said printer P is formed by arranging and attaching the electrification member 10, the development section 11, and the imprint section 12 in the perimeter of a photo conductor 9 while forming a photo conductor 9 in the unit body 8 formed in the shape of a case, enabling free rotation. The development section 11 has the developer container 13 formed in said unit body 8 at one, the stirrer 14 which agitates the developer contained inside this developer container 13 and which can be rotated, the developing roller 15 in contact with a photo conductor 9, the feed roller 16 which supplies a developer to this developing roller 15, and the blade 17 contacted by the developing roller 15. Furthermore, the latent-image formation section 18 which forms an electrostatic latent image is formed in the upper part of a process cartridge 3 by scanning the laser beam modulated based on the picture signal into the electrification part of a photo conductor 9.

[0016] Moreover, while supporting the manuscript read with said scanner 2 to the 1 side of said body 1 of equipment The tray 19 which supports the imprint form S in the state of installation aslant is formed. Under this tray 19 The feed roller 20 by which a rotation drive is carried out, and the press plate 21 which is energized by the one direction and carries out the pressure welding of the imprint form S on a tray 19 to the feed roller 20, The separation pad 22 and the separation roller 23 which prevent the double feed of the imprint form S are formed by contacting the feed roller 20 elastically, respectively.

[0017] The feed roller 20, the separation pad 22, and the separation roller 23 are arranged at the entrance side of said form conveyance way 4. The bottom pass 24 located in the downstream rather than the feed roller 20 is opened for free passage by this form conveyance way 4. Furthermore, the fixing section 25 fixed to the downstream of the form conveyance way 4 in the image imprinted on the imprint form S is arranged.

[0018] Furthermore, the form stacker 26 arranged between the upper part of the fixing section 25 and said manuscript tray 6 is formed in said body 1 of equipment. This form stacker 26 has the backing plate 27 which is located on the extended field of that manuscript tray 6, and supports the imprint form S, when rotating the manuscript tray 6 on an imaginary line B. Furthermore, the delivery opening 28 which delivers paper to the imprint form S to which paper was delivered from the fixing section 25 horizontally, and the reversal delivery way 29 which is made to reverse the imprint form S to which paper was delivered from the fixing section 25, and is led to the form stacker 26 are formed near the side face of the body 1 of equipment of the opposite side in the tray 19. The change pawl 31 which the delivery roller 30 which makes a pair, respectively is arranged, and changes the eject direction of the imprint form S to the branch point of the reversal delivery way 29 and the delivery opening 28 is formed in the upper part and the lower part of this reversal delivery way 29 free [rotation].

[0019] As shown in drawing 3, it is possible for the body 1 of equipment to be laid on feed equipment 32, and to use the imprint form in feed equipment 32 other than the imprint form in said medium tray 19. Moreover, the panel-like control unit 33 is formed in ** outside said scanner 2. This control unit 33 set up size assignment of copy number of sheets and an imprint form, the scale of a copy, etc., when copy mode was chosen, and when facsimile mode is chosen, it is equipped with the function to input the telephone number of a transmission place.

[0020] Next, an electronic circuitry is explained with reference to drawing 5. Actuation of ROM34 in which fixed data, such as a program, were written, and each part is supervised. RAM36 written in for variable datas which perform the program written in ROM34, such as CPU35 and work-piece data,

enabling free rewriting, said scanner 2, the memory 37 which stores the data which carry out a printout, said control unit 33, said printer P The PC interface (I/F section) 39 which connects terminals, such as the image-processing section 38 and a personal computer (Following PC is called), the modem 40, and the network control-section 41 grade are connected by the system bus 42. In addition, the data stored in memory 37 are the data read with the scanner 2, the data transmitted from PC, received data received from the outside through the telephone line.

[0021] In such a configuration, in reading the image of a manuscript, as a continuous line shows, the manuscript tray 6 is maintained in the level condition, and it supplies a manuscript to drawing 4 at a read station 5. An image is read by the read station 5, and the supplied manuscript is put against the upper part of a tray 19, and is supported in the condition. Thus, it can transmit outside (use gestalt as a transmitting mode of facsimile), or the read image can feed paper to the imprint form S from a tray 19, and can print a reading image in this imprint form S (use gestalt as a copying machine). Or the image transmitted from the outside is printable in the imprint form S (use gestalt as the receive mode of facsimile). Furthermore, a digital multifunctional image processing system can connect PC to the PC interface (I/F section) 39, and it can be used for it as a printer which prints out the data from this PC.

[0022] In printing, in drawing 4, an electrostatic latent image is formed in the electrification part of a photo conductor 9 of the latent-image formation section 18 based on the image which was charged by the electrification member 10 and received the front face from the reading image or the outside of a manuscript in the process in which a photo conductor 9 is rotated clockwise. This electrostatic latent image is developed by the development section 11. This development image is imprinted by the imprint form S to which paper was fed from the tray 19 with the feed roller 20. When passing the fixing section 25, it is fixed to the imprint form S with which the image was imprinted, and it is delivered to the delivery opening 28 or the form stacker 26 by the sense of the change pawl 31.

[0023] Here, processing of the user actuation in copy processing is explained with reference to the flow chart of drawing 1. Step S 1-1 is the step which judges whether the operator who uses a digital multifunctional image processing system directly set up copy mode using the control unit 33, when it judges that it is not copy mode, it clears a timer (step S 1-2), and it returns to step S1-1. Step S When it is judged that it is copy mode in 1-1, it shifts to step S1-3, and the existence of the key input from a control unit 33 is judged. At the step which judges whether the key for setting up copy operation parameters, such as a scale of copy number of sheets, an imprint paper size, printing concentration, and a copy, was inputted, when it is judged as those with a key input and judges that that key is a mode clear key (step S1-4 YES), a timer is cleared (step S 1-5), and it returns to step S1-1 these step S1-3. Since a timer will be set as a predetermined value if an operator performs copy actuation so that it may mention later, "timer =0" in step S1-2 and S1-5 means that the operator omits copy actuation.

[0024] Step S It is in the condition that copy mode was maintained to have judged that the key inputted in 1-4 was not a mode clear key, and it means what copy operation parameters, such as a scale of copy number of sheets, an imprint paper size, printing concentration, and a copy, were set up for by the key input.

[0025] Even if copy mode is set up (step S1-1 YES), when there is no key input of a copy operation parameter (step S1-3 NO), ***** of a timer is not performed and it is still timer =0 (step S1-7 YES). Therefore, if there is no operational request of a printer (step S1-9 NO), it will be step S1-1. YES-> step S1-3 NO-> step S1-7 YES-> step S1-9 The loop formation of NO is repeated.

[0026] Moreover, when there is a key input of the usual copy operation parameter after copy mode is set up (step S1-1 YES) (step S1-3 YES-> step S1-4 NO), a timer is set up (step S 1-6), and a count-down of a timer is started (step S1-7 NO-> step S1-8). Therefore, if there is no operational request of a printer (step S1-9 NO), as long as there is a key input of usual copy operation parameters other than a mode clearance (step S1-3 YES-> step S1-4 NO), a setup of the timer of step S1-6 and a timer count-down of step S1-8 are repeated. That is, timer !=0 means that an operator is copy operating it. In this case, although prepared for 5 minutes as time amount conjectured that, as for the time amount set as a timer, an operator will finish copy actuation, this is an example and you may make it set up other values.

[0027] Step S In 1-9, when it judges with those of the printer actuation from PC with a demand, it

judges whether priority is continuously given to the drive of printers P other than copy processing (step S 1-10). You may make it the priority setting means for setting up the priority choose priority with the interactive mode on the screen of terminals, such as PC, or may make it choose a priority foreword by the key of the control unit 33 by the side of a digital multifunctional image processing system.

[0028] When printer actuation priority is denied (step S1-10 NO), the signal of the purport for which printer actuation is improper is outputted to PC (step S 1-11). A print error is displayed on the screen of PC which received the signal for which this printer actuation is improper, and the operator who looked at this performs required processing of reclaim etc. from PC. Although after processing of step S-11 shifts to step S1-1, when printer actuation priority is chosen, it faces outputting (step S1-10 YES) and the data from PC to Printer P, and a timer value is checked (step S 1-12). That is, if the timer value which it faced outputting the data from PC to Printer P, and was set up by step S1-6 is not 0 If it puts in another way and 5 minutes will not have passed, after setting up a timer (S1-12 YES), in order to judge that a current operator is copy processing, It is judged that copy processing is interrupted by outputting the data from PC to be started from now on to Printer P. An interruption flag is set (step S 1-13), and copy operation parameters, such as a scale of the copy number of sheets inputted in step S1-3 before it, an imprint paper size, printing concentration, and a copy, are memorized in RAM36 grade (step S 1-14). Conversely, if a timer value is 0 (S1-12 NO), it will be judged as that for which it faces outputting the data from PC to Printer P, and copy processing is not interrupted, and an interruption flag will be reset (step S 1-15).

[0029] Thus, when outputting data to Printer P by the demand from PC, printing is started if Printer P is an idle state irrespective of interruption and being un-interrupted about copy processing (step S 1-16). Then, in step S1-17, since interruption of the copy actuation by the operator has not occurred when the set condition of an interruption flag is judged (step S 1-18) and the interruption flag is not set at this step after judging it as printing actuation termination (step S1-18 NO), after clearing a timer (step S 1-19), it returns to step S1-1. Since it means that copy processing was interrupted when the interruption flag is set (step S1-18 YES), in order to continue copy processing, a timer is set up (step S 1-20), and the copy operation parameter memorized in step S1-14 is called, and it is set as a control unit 33 (step S 1-21), and returns to step S1-1.

[0030] Thus, when performing copy processing and the output of the data from PC, both priority foreword can be chosen from a control unit 33. Moreover, when priority is given to the actuation which interrupts copy processing and outputs the data from PC, since calling and resetting copy operation parameters, such as a scale of copy number of sheets, an imprint paper size, printing concentration, and a copy, is made automatically, it does not need to set up a copy operation parameter again by an operator's hand, and can mitigate an operator's burden.

[0031] In addition, Rhine connection of the terminals, such as PC, was made in the range in which the digital multifunctional image processing system of this invention and concomitant use are possible, and what is connected through the telephone line does not contain.

[0032] Next, the processing to the interrupt printout demand by external factors (facsimile reception) is explained with reference to drawing 2 among interrupt printout demands other than copy processing. In a digital multifunctional image processing system, the condition of the timer mentioned above when the receive state of facsimile was supervised (step S 2-1) and reception of facsimile was started (interrupt printout demand) is checked (step S 2-2), and when it judges that a timer is not 0, memory reception is started. That is, reception is started, carrying out [accumulate the received data from the outside in memory 37 (step S 2-3), and] a printout to Printer P, if Printer P is an idle state, since it is not copy mode when a timer is 0 (step S 2-4).

[0033] Moreover, the report printout demand which outputs automatically the communication link hysteresis of facsimile and the error under communication link may be received. Reception is started, carrying out [when it is judged as such those with an automatic interruption printout demand (step S 2-5), check the condition of a timer (step S 2-6), and] a printout to Printer P step S2-1, if Printer P is an idle state, since it is not copy mode when return and a timer are 0, when a timer is not 0 (step S 2-7).

[0034] Here, the configuration of each means used as the requirements for a configuration in a claim is

connected to the processing on a flow chart here, and is explained. A copy actuation input judging means to judge the condition that setting actuation for copy processing is performed is equivalent to step S1-1 and S1-3-S1-4.

[0035] An interrupt printout demand judging means to judge the existence of interrupt printout demands other than copy processing is equivalent to step S1-9, S2-1, and S2-5. The printout means for stopping which stops the interrupt printout when interrupt printout demands other than copy processing are during the period when setting actuation for copy processing is performed is equivalent to step S1-10 and S1-11. In addition, it is judged by the check of the timer value in step S1-7 whether it is during the period when setting actuation for copy processing is performed. An internal-interruption printout demand judging means to judge the existence of interruption of the interrupt printout demand to this printer P from the terminal by which Rhine connection was made is equivalent to Printer P step S1-9. A priority setting means is realized by the input from a control unit 33 or a terminal. A printout interrupt means to output to a printer the data transmitted from the terminal when an interrupt printout demand was during the period when setting actuation for copy processing is performed where priority is given to the printout from a terminal with this priority setting means from a terminal is equivalent to step S1-15 and S1-16. In addition, it is judged by the check of the timer value in step S1-12 whether it is during the period when setting actuation for copy processing is performed. A copy setting invalid judging means to judge the setup till then as an invalid when a setup for copy processing is cleared by the control unit 33 is equivalent to step S1-5. When the interrupt printout demand from a terminal is during the setting actuation for copy processing, a parameter storage means to memorize a copy operation parameter at the copy processing interruption time is equivalent to step S1-14. A parameter resetting means to read a copy operation parameter and to set it as a control unit after performing processing by the internal-interruption printout demand from a terminal is equivalent to step S1-21.

[0036] Next, the second gestalt of operation of this invention is explained. The gestalt of this operation is the example applied to the digital multifunctional image processing system of a book mold. The same part as the part explained in the gestalt of pre-operation also omits explanation using the same sign. As shown in drawing 6, the scanner 52 of a book mold is formed in the upper part of the body 51 of equipment of a digital multifunctional image processing system, and the printer P which carries out a printout to the imprint form which has the form conveyance way 4 conveyed is formed in the interior.

[0037] The body 53 of a scanner of said scanner 52 is supported by the pivot 54 free [vertical rotation] so that the top face of the body 51 of equipment can be opened wide. The read station 55 which reads an image and which can be scanned is formed in the interior of the body 53 of a scanner, the contact glass 56 which lays a manuscript is formed in a top face, and the pressure plate 57 which can be opened and closed and which presses down the manuscript on this contact glass 56 is formed. While the manuscript tray 58 which loads a manuscript into this pressure plate 57 is formed, two or more rollers 59 which convey the manuscript on this manuscript tray 58 back (it sets to drawing 6 and is the right) are formed. Moreover, the same control unit 33 as the gestalt of pre-operation is formed in the top face of the near side (it sets to drawing 6 and is the left) of the body 53 of a scanner.

[0038] Such a scanner 52 is constituted so that the reading format of putting a manuscript on the top face of contact glass 56, pressing this down with a pressure plate 57, fixing, scanning a read station 55 along with contact glass 56, and reading an image, and the reading format of making a read station 55 standing it still by the position, conveying the manuscript loaded into the manuscript tray 58 with a roller 59, and reading an image with delivery can be chosen.

[0039] The tray 19 which supports the imprint form to print is formed in the posterior part of the body 51 of equipment, and the paper output tray 60 is formed in the anterior part of the opposite side. Printer P is formed in the interior of the body 51 of equipment with the same configuration as the gestalt of pre-operation. That is, a latent image is formed in the front face of a photo conductor 9 by the latent-image formation section 18, the latent image is developed in the development section 11, and the development image on a photo conductor 9 is imprinted by the imprint section 12 in the imprint form to which paper was fed from the tray 19, and it is constituted so that the imprint form which was established by the fixing section 25 and established in the transfer picture may be delivered to a paper output tray 60 with

the delivery roller 30.

[0040] The electronic circuitry which controls such a digital multifunctional image processing system is the same as the electronic circuitry fundamentally explained with reference to drawing 5, and it can transmit outside (use gestalt as a transmitting mode of facsimile), or the image read with the scanner 52 can feed paper to an imprint form from a tray 19, and can print a reading image in this imprint form (use gestalt as a copying machine). Or the image transmitted from the outside is printable in an imprint form (use gestalt as the receive mode of facsimile). Furthermore, it can be used as a printer which prints out the data from PC which made Rhine connection.

[0041]

[Effect of the Invention] In the digital multifunctional image processing system with which invention according to claim 1 used printer ability, the copy function, and the facsimile function properly The control unit which performs actuation including the actuation for copy processing, and a copy actuation input judging means to judge the condition that setting actuation for copy processing is performed by this control unit, An interrupt printout demand judging means to judge the existence of interrupt printout demands other than copy processing, Since it has the printout means for stopping which stops the interrupt printout when interrupt printout demands other than copy processing are during the period when setting actuation for copy processing is performed In the condition that the setting actuation for copy processing is made, even if a printer is an idle state, interrupt printout demands other than copy processing can be prevented, and priority can be given to processing of a copy operator.

[0042] Invention according to claim 2 is set to invention according to claim 1. In a printout means for stopping Since received data are accumulated in memory and it was made to output the received data in this memory to a printer after copy termination when interrupt printout demands other than copy processing were during the period when actuation for copy processing is performed When interrupt printout demands other than copy processing are during the setting actuation for copy processing, the received data from the outside can be accumulated in memory until copy processing is completed, and the received data can be outputted after copy termination.

[0043] In invention according to claim 3, in invention according to claim 2, since it is the interrupt printout demand by facsimile communication and the received data from the outside are accumulated in memory when the interrupt printout demand from the outside by facsimile is during copy processing, carrying out the retry of the dispatch of interrupt printout demands other than copy processing repeatedly to an addresser is lost.

[0044] In invention according to claim 1, since it was made to judge as an interrupt printout demand also to the report printout demand automatically outputted in the communication link hysteresis of facsimile, or the error under communication link, invention according to claim 4 can give [means / interrupt printout demand judging] priority in copy processing, even when the demand of a report printout is during the setting actuation for copy processing.

[0045] In the digital multifunctional image processing system which invention according to claim 5 is equipped with a printer, a scanner, a modem, etc., and used printer ability, the copy function, and the facsimile function properly An internal-interruption printout demand judging means to judge the existence of an interrupt printout demand to the printer from the terminal by which Rhine connection was made to said printer among the control unit which performs actuation including the actuation for copy processing, and interrupt printout demands other than copy processing, A priority setting means to set up the priority foreword of the setting actuation for copy processing, and the printout from said terminal, With this priority setting means Since it has a printout interrupt means to output the data transmitted from said terminal to said printer when an interrupt printout demand is during the period when setting actuation for copy processing is performed by the established state which gave priority to the printout from said terminal from said terminal When the printout demand from a terminal by which Rhine connection was made is during copy processing, it can be chosen whether priority is given to the printout demand when an operator operates a priority setting means. Therefore, only when an interrupt printout demand is during the period when the setting actuation for copy processing is made from a terminal, and priority is given to the printout demand from a terminal, the data which interrupted copy

processing and were transmitted from the terminal can be printed out.

[0046] In invention according to claim 1, invention according to claim 6 can return a copy actuation input judging means to an initial state automatically, when there is also no actuation of what and fixed period neglect is carried out, after ending the setting actuation for copy processing since a fixed period after the input of the setting actuation for copy processing was made to judge as under copy actuation.

[0047] In invention according to claim 1 or 6, since it has a copy setting invalid judging means to judge considering the setup till then as an invalid when a setup for copy processing is cleared by the control unit, invention according to claim 7 can carry out the setup till then to an invalid by the copy setting invalid judging means, when the setup is cleared during the setting actuation for copy processing, or after setting actuation termination. Thereby, a standby condition can be immediately maintained to the interrupt printout demand from the outside.

[0048] A parameter storage means to memorize a copy operation parameter at the copy processing interruption time when invention according to claim 8 has the interrupt printout demand from a terminal during the setting actuation for copy processing in invention according to claim 5, Since it has a parameter resetting means to read said copy operation parameter and to set it as a control unit after performing processing by the internal-interruption printout demand from a terminal When copy processing is interrupted, the interrupt printout demand from a terminal is accepted and a printout is ended Based on the copy operation parameter set up before it, it can shift to copy processing immediately, without reinputting the copy operation parameter which shows copy conditions by an operator's own hand.

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TECHNICAL FIELD

[Field of the Invention] This invention relates to a digital multifunctional image processing system.

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PRIOR ART

[Description of the Prior Art] Conventionally, it has a printer, a scanner, a modem, etc. and there is a digital multifunctional image processing system which used printer ability, the copy function, and the facsimile function properly. In such an image processing system, while operating this image processing system, this image processing system may be used by the input of those other than an operator. In this case, unless use of resources, such as a printer and a scanner, laps in time, it is constituted so that parallel actuation may be performed. For example, when facsimile was received and a printer is judged not to actually operate, he is trying to accept the printout demand of the received data of facsimile during copy processing.

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EFFECT OF THE INVENTION

[Effect of the Invention] Invention according to claim 1 is the control unit which performs actuation including the actuation for copy processing in the digital multifunctional image processing system which used printer ability, the copy function, and the facsimile function properly, and this control unit. A copy actuation input judging means to judge the condition that setting actuation for copy processing is performed, An interrupt printout demand judging means to judge the existence of interrupt printout demands other than copy processing, Since it has the printout means for stopping which stops the interrupt printout when interrupt printout demands other than copy processing are during the period when setting actuation for copy processing is performed In the condition that the setting actuation for copy processing is made, even if a printer is an idle state, interrupt printout demands other than copy processing can be prevented, and priority can be given to processing of a copy operator.

[0042] It sets to invention according to claim 1, and invention according to claim 2 is at a printout means for stopping, Since received data are accumulated in memory and it was made to output the received data in this memory to a printer after copy termination when interrupt printout demands other than copy processing were during the period when actuation for copy processing is performed When interrupt printout demands other than copy processing are during the setting actuation for copy processing, the received data from the outside can be accumulated in memory until copy processing is completed, and the received data can be outputted after copy termination.

[0043] In invention according to claim 3, in invention according to claim 2, since it is the interrupt printout demand by facsimile communication and the received data from the outside are accumulated in memory when the interrupt printout demand from the outside by facsimile is during copy processing, carrying out the retry of the dispatch of interrupt printout demands other than copy processing repeatedly to an addresser is lost.

[0044] In invention according to claim 1, since it was made to judge as an interrupt printout demand also to the report printout demand automatically outputted in the communication link hysteresis of facsimile, or the error under communication link, invention according to claim 4 can give [means / interrupt printout demand judging] priority in copy processing, even when the demand of a report printout is during the setting actuation for copy processing.

[0045] In the digital multifunctional image processing system which invention according to claim 5 is equipped with a printer, a scanner, a modem, etc., and used printer ability, the copy function, and the facsimile function properly An internal-interruption printout demand judging means to judge the existence of an interrupt printout demand to the printer from the terminal by which Rhine connection was made to said printer among the control unit which performs actuation including the actuation for copy processing, and interrupt printout demands other than copy processing, A priority setting means to set up the priority foreword of the setting actuation for copy processing, and the printout from said terminal, With this priority setting means Since it has a printout interrupt means to output the data transmitted from said terminal to said printer when an interrupt printout demand is during the period when setting actuation for copy processing is performed by the established state which gave priority to the printout from said terminal from said terminal When the printout demand from a terminal by which

Rhine connection was made is during copy processing, it can be chosen whether priority is given to the printout demand when an operator operates a priority setting means. Therefore, only when an interrupt printout demand is during the period when the setting actuation for copy processing is made from a terminal, and priority is given to the printout demand from a terminal, the data which interrupted copy processing and were transmitted from the terminal can be printed out.

[0046] In invention according to claim 1, invention according to claim 6 can return a copy actuation input judging means to an initial state automatically, when there is also no actuation of what and fixed period neglect is carried out, after ending the setting actuation for copy processing since a fixed period after the input of the setting actuation for copy processing was made to judge as under copy actuation.

[0047] In invention according to claim 1 or 6, since it has a copy setting invalid judging means to judge considering the setup till then as an invalid when a setup for copy processing is cleared by the control unit, invention according to claim 7 can carry out the setup till then to an invalid by the copy setting invalid judging means, when the setup is cleared during the setting actuation for copy processing, or after setting actuation termination. Thereby, a standby condition can be immediately maintained to the interrupt printout demand from the outside.

[0048] In invention according to claim 5, when the interrupt printout demand from a terminal is during the setting actuation for copy processing, set invention according to claim 8 at the copy processing interruption time. Since it has a parameter storage means to memorize a copy operation parameter, and a parameter resetting means to read said copy operation parameter and to set it as a control unit after performing processing by the internal-interruption printout demand from a terminal When copy processing is interrupted, the interrupt printout demand from a terminal is accepted and a printout is ended Based on the copy operation parameter set up before it, it can shift to copy processing immediately, without reinputting the copy operation parameter which shows copy conditions by an operator's own hand.

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TECHNICAL PROBLEM

[Problem(s) to be Solved by the Invention] However, since a printer will be judged to be what does not actually operate if data are received from the exterior while carrying out setting actuation of the input of copy number of sheets, the input of concentration assignment, the input of paper-size selection, etc. for copy processing of the operator of an image processing system, and it is before pushing a copy start button, printout processing of facsimile reception will be interrupted. In this case, since copy processing will be interrupted, it is inconvenient for internal users, such as office.

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MEANS

[Means for Solving the Problem] In the digital multifunctional image processing system which invention according to claim 1 is equipped with a printer, a scanner, a modem, etc., and used printer ability, the copy function, and the facsimile function properly. The control unit which performs actuation including the actuation for copy processing, and a copy actuation input judging means to judge the condition that setting actuation for copy processing is performed by this control unit, When interrupt printout demands other than copy processing are during an interrupt printout demand judging means to judge the existence of interrupt printout demands other than copy processing, and the period when setting actuation for copy processing is performed, it has the printout means for stopping which stops the interrupt printout.

Therefore, the condition that the setting actuation for copy processing is made is checked by the copy actuation input judging means. When interrupt printout demands other than copy processing are during the period of this setup, that condition is checked by the interrupt printout demand judging means, and a printout is suspended by the printout means for stopping.

[0005] When interrupt printout demands other than copy processing were during the period when actuation for copy processing is performed, invention according to claim 2 accumulates received data in memory, and it was made to output the received data in this memory to a printer after copy termination by the printout means for stopping in invention according to claim 1. Therefore, when interrupt printout demands other than copy processing are during the setting actuation for copy processing, the received data from the outside are accumulated in memory, and the printout of the received data is carried out after copy termination.

[0006] In invention according to claim 3, interrupt printout demands other than copy processing are interrupt printout demands by facsimile communication in invention according to claim 2. Therefore, since the received data from the outside are accumulated in memory when the interrupt printout demand from the outside by facsimile is during copy processing, carrying out the retry of the dispatch repeatedly to an addresser is lost.

[0007] Invention according to claim 4 judged the interrupt printout demand judging means as an interrupt printout demand in invention according to claim 1 also to the report printout demand which outputs automatically the communication link hysteresis of facsimile, and the error under communication link. Therefore, even when the demand of a report printout is during the setting actuation for copy processing, it becomes possible to give priority to copy processing.

[0008] In the digital multifunctional image processing system which invention according to claim 5 is equipped with a printer, a scanner, a modem, etc., and used printer ability, the copy function, and the facsimile function properly. An internal-interruption printout demand judging means to judge the existence of an interrupt printout demand to the printer from the terminal by which Rhine connection was made to said printer among the control unit which performs actuation including the actuation for copy processing, and interrupt printout demands other than copy processing, A priority setting means to set up the priority foreword of the setting actuation for copy processing, and the printout from said terminal, With this priority setting means When an interrupt printout demand is during the period when setting actuation for copy processing is performed by the established state which gave priority to the

printout from said terminal from said terminal, it has a printout interrupt means to output the data transmitted from said terminal to said printer.

[0009] Therefore, when the interrupt printout demand from a terminal by which Rhine connection was made is during copy processing, it is selectable whether priority is given to the interrupt printout demand, when an operator operates a priority setting means. It is possible in printing out the data that condition was checked by the interrupt printout demand judging means when the condition that the setting actuation for copy processing is made was checked by the copy actuation input judging means and the interrupt printout demand from a terminal was during the period of this setup, copy processing was interrupted only when priority is given to the printout demand from a terminal, and transmitted from a terminal.

[0010] As for the copy actuation input judging means, invention according to claim 6 judged a fixed period after the input of the setting actuation for copy processing as under copy actuation in invention according to claim 1. Therefore, after ending the setting actuation for copy processing, when there is also no actuation of what and fixed period neglect is carried out, it becomes possible to make it return to an initial state automatically.

[0011] In invention according to claim 1 or 6, invention according to claim 7 is equipped with a copy setting invalid judging means to judge the setup till then as an invalid, when a setup for copy processing is cleared by the control unit. Therefore, when the setup is cleared during the setting actuation for copy processing, or after setting actuation termination, a copy setting invalid judging means makes the setup till then an invalid. Thereby, it becomes possible to maintain a standby condition to the interrupt printout demand from the outside immediately.

[0012] In invention according to claim 5, invention according to claim 8 has a parameter storage means memorize a copy operation parameter at the copy processing interruption time, and a parameter resetting means read in said copy operation parameter and set up to a control unit after performing processing by the internal-interruption printout demand from a terminal, when the interrupt printout demand from a terminal is during the setting actuation for copy processing. Therefore, when copy processing is interrupted, the interrupt printout demand from a terminal is accepted and a printout is ended, it becomes possible to shift to copy processing immediately based on the copy operation parameter set up before it.

[0013]

[Embodiment of the Invention] The first gestalt of operation of this invention is explained based on drawing 1 thru/or drawing 5. First, with reference to drawing 4, the structure of a digital multifunctional image processing system is explained. 1 is a body of equipment. The upper part of this body 1 of equipment is equipped with the scanner 2 which reads the image of a manuscript, and the printer P which carries out a printout to the imprint form which has the form conveyance way 4 conveyed is formed in the interior.

[0014] Said scanner 2 has the read station 5 which reads a manuscript image, and the manuscript tray 6 which lays the manuscript supplied to this read station 5, and this manuscript tray 6 is supported so that it may rotate up to the location shown by the imaginary line B from a horizontal position centering on a rocking lever shaft 7. In addition, the manuscript tray 6 is constituted so that it may be stabilized in the location shown by the horizontal position and the imaginary line B with the stopper which is not illustrated.

[0015] The process cartridge 3 of said printer P is formed by arranging and attaching the electrification member 10, the development section 11, and the imprint section 12 in the perimeter of a photo conductor 9 while forming a photo conductor 9 in the unit body 8 formed in the shape of a case, enabling free rotation. The development section 11 has the developer container 13 formed in said unit body 8 at one, the stirrer 14 which agitates the developer contained inside this developer container 13 and which can be rotated, the developing roller 15 in contact with a photo conductor 9, the feed roller 16 which supplies a developer to this developing roller 15, and the blade 17 contacted by the developing roller 15. Furthermore, the latent-image formation section 18 which forms an electrostatic latent image is formed in the upper part of a process cartridge 3 by scanning the laser beam modulated based on the picture signal into the electrification part of a photo conductor 9.

[0016] Moreover, while supporting the manuscript read with said scanner 2 to the 1 side of said body 1 of equipment The tray 19 which supports the imprint form S in the state of installation aslant is formed. Under this tray 19 The feed roller 20 by which a rotation drive is carried out, and the press plate 21 which is energized by the one direction and carries out the pressure welding of the imprint form S on a tray 19 to the feed roller 20, The separation pad 22 and the separation roller 23 which prevent the double feed of the imprint form S are formed by contacting the feed roller 20 elastically, respectively.

[0017] The feed roller 20, the separation pad 22, and the separation roller 23 are arranged at the entrance side of said form conveyance way 4. The bottom pass 24 located in the downstream rather than the feed roller 20 is opened for free passage by this form conveyance way 4. Furthermore, the fixing section 25 fixed to the downstream of the form conveyance way 4 in the image imprinted on the imprint form S is arranged.

[0018] Furthermore, the form stacker 26 arranged between the upper part of the fixing section 25 and said manuscript tray 6 is formed in said body 1 of equipment. This form stacker 26 has the backing plate 27 which is located on the extended field of that manuscript tray 6, and supports the imprint form S, when rotating the manuscript tray 6 on an imaginary line B. Furthermore, the delivery opening 28 which delivers paper to the imprint form S to which paper was delivered from the fixing section 25 horizontally, and the reversal delivery way 29 which is made to reverse the imprint form S to which paper was delivered from the fixing section 25, and is led to the form stacker 26 are formed near the side face of the body 1 of equipment of the opposite side in the tray 19. The change pawl 31 which the delivery roller 30 which makes a pair, respectively is arranged, and changes the eject direction of the imprint form S to the branch point of the reversal delivery way 29 and the delivery opening 28 is formed in the upper part and the lower part of this reversal delivery way 29 free [rotation].

[0019] As shown in drawing 3, it is possible for the body 1 of equipment to be laid on feed equipment 32, and to use the imprint form in feed equipment 32 other than the imprint form in said medium tray 19. Moreover, the panel-like control unit 33 is formed in ** outside said scanner 2. This control unit 33 set up size assignment of copy number of sheets and an imprint form, the scale of a copy, etc., when copy mode was chosen, and when facsimile mode is chosen, it is equipped with the function to input the telephone number of a transmission place.

[0020] Next, an electronic circuitry is explained with reference to drawing 5. Actuation of ROM34 in which fixed data, such as a program, were written, and each part is supervised. RAM36 written in for variable datas which perform the program written in ROM34, such as CPU35 and work-piece data, enabling free rewriting, said scanner 2, the memory 37 which stores the data which carry out a printout, said control unit 33, said printer P The PC interface (I/F section) 39 which connects terminals, such as the image-processing section 38 and a personal computer (Following PC is called), the modem 40, and the network control-section 41 grade are connected by the system bus 42. In addition, the data stored in memory 37 are the data read with the scanner 2, the data transmitted from PC, received data received from the outside through the telephone line.

[0021] In such a configuration, in reading the image of a manuscript, as a continuous line shows, the manuscript tray 6 is maintained in the level condition, and it supplies a manuscript to drawing 4 at a read station 5. An image is read by the read station 5, and the supplied manuscript is put against the upper part of a tray 19, and is supported in the condition. Thus, it can transmit outside (use gestalt as a transmitting mode of facsimile), or the read image can feed paper to the imprint form S from a tray 19, and can print a reading image in this imprint form S (use gestalt as a copying machine). Or the image transmitted from the outside is printable in the imprint form S (use gestalt as the receive mode of facsimile). Furthermore, a digital multifunctional image processing system can connect PC to the PC interface (I/F section) 39, and it can be used for it as a printer which prints out the data from this PC.

[0022] In printing, in drawing 4, an electrostatic latent image is formed in the electrification part of a photo conductor 9 of the latent-image formation section 18 based on the image which was charged by the electrification member 10 and received the front face from the reading image or the outside of a manuscript in the process in which a photo conductor 9 is rotated clockwise. This electrostatic latent image is developed by the development section 11. This development image is imprinted by the imprint

form S to which paper was fed from the tray 19 with the feed roller 20. When passing the fixing section 25, it is fixed to the imprint form S with which the image was imprinted, and it is delivered to the delivery opening 28 or the form stacker 26 by the sense of the change pawl 31.

[0023] Here, processing of the user actuation in copy processing is explained with reference to the flow chart of drawing 1. Step S 1-1 is the step which judges whether the operator who uses a digital multifunctional image processing system directly set up copy mode using the control unit 33, when it judges that it is not copy mode, it clears a timer (step S 1-2), and it returns to step S1-1. Step S When it is judged that it is copy mode in 1-1, it shifts to step S1-3, and the existence of the key input from a control unit 33 is judged. At the step which judges whether the key for setting up copy operation parameters, such as a scale of copy number of sheets, an imprint paper size, printing concentration, and a copy, was inputted, when it is judged as those with a key input and judges that that key is a mode clear key (step S1-4 YES), a timer is cleared (step S 1-5), and it returns to step S1-1 these step S1-3. Since a timer will be set as a predetermined value if an operator performs copy actuation so that it may mention later, "timer =0" in step S1-2 and S1-5 means that the operator omits copy actuation.

[0024] Step S It is in the condition that copy mode was maintained to have judged that the key inputted in 1-4 was not a mode clear key, and it means what copy operation parameters, such as a scale of copy number of sheets, an imprint paper size, printing concentration, and a copy, were set up for by the key input.

[0025] Even if copy mode is set up (step S1-1 YES), when there is no key input of a copy operation parameter (step S1-3 NO), ***** of a timer is not performed and it is still timer =0 (step S1-7 YES). Therefore, if there is no operational request of a printer (step S1-9 NO), it will be step S1-1. YES-> step S1-3 NO-> step S1-7 YES-> step S1-9 The loop formation of NO is repeated.

[0026] Moreover, when there is a key input of the usual copy operation parameter after copy mode is set up (step S1-1 YES) (step S1-3 YES-> step S1-4 NO), a timer is set up (step S 1-6), and a count-down of a timer is started (step S1-7 NO-> step S1-8). Therefore, if there is no operational request of a printer (step S1-9 NO), as long as there is a key input of usual copy operation parameters other than a mode clearance (step S1-3YES-> step S1-4 NO), a setup of the timer of step S1-6 and a timer count-down of step S1-8 are repeated. That is, timer !=0 means that an operator is copy operating it. In this case, although prepared for 5 minutes as time amount conjectured that, as for the time amount set as a timer, an operator will finish copy actuation, this is an example and you may make it set up other values.

[0027] Step S In 1-9, when it judges with those of the printer actuation from PC with a demand, it judges whether priority is continuously given to the drive of printers P other than copy processing (step S 1-10). You may make it the priority setting means for setting up the priority choose priority with the interactive mode on the screen of terminals, such as PC, or may make it choose a priority foreword by the key of the control unit 33 by the side of a digital multifunctional image processing system.

[0028] When printer actuation priority is denied (step S1-10 NO), the signal of the purport for which printer actuation is improper is outputted to PC (step S 1-11). A print error is displayed on the screen of PC which received the signal for which this printer actuation is improper, and the operator who looked at this performs required processing of reclaim etc. from PC. Although after processing of step S-11 shifts to step S1-1, when printer actuation priority is chosen, it faces outputting (step S1-10 YES) and the data from PC to Printer P, and a timer value is checked (step S 1-12). That is, if the timer value which it faced outputting the data from PC to Printer P, and was set up by step S1-6 is not 0 If it puts in another way and 5 minutes will not have passed, after setting up a timer (S1-12 YES), in order to judge that a current operator is copy processing, It is judged that copy processing is interrupted by outputting the data from PC to be started from now on to Printer P. An interruption flag is set (step S 1-13), and copy operation parameters, such as a scale of the copy number of sheets inputted in step S1-3 before it, an imprint paper size, printing concentration, and a copy, are memorized in RAM36 grade (step S 1-14). Conversely, if a timer value is 0 (S1-12 NO), it will be judged as that for which it faces outputting the data from PC to Printer P, and copy processing is not interrupted, and an interruption flag will be reset (step S 1-15).

[0029] Thus, when outputting data to Printer P by the demand from PC, printing is started if Printer P is

an idle state irrespective of interruption and being un-interrupted about copy processing (step S 1-16). Then, in step S1-17, since interruption of the copy actuation by the operator has not occurred when the set condition of an interruption flag is judged (step S 1-18) and the interruption flag is not set at this step after judging it as printing actuation termination (step S1-18 NO), after clearing a timer (step S 1-19), it returns to step S1-1. Since it means that copy processing was interrupted when the interruption flag is set (step S1-18 YES), in order to continue copy processing, a timer is set up (step S 1-20), and the copy operation parameter memorized in step S1-14 is called, and it is set as a control unit 33 (step S 1-21), and returns to step S1-1.

[0030] Thus, when performing copy processing and the output of the data from PC, both priority foreword can be chosen from a control unit 33. Moreover, when priority is given to the actuation which interrupts copy processing and outputs the data from PC, since calling and resetting copy operation parameters, such as a scale of copy number of sheets, an imprint paper size, printing concentration, and a copy, is made automatically, it does not need to set up a copy operation parameter again by an operator's hand, and can mitigate an operator's burden.

[0031] In addition, Rhine connection of the terminals, such as PC, was made in the range in which the digital multifunctional image processing system of this invention and concomitant use are possible, and what is connected through the telephone line does not contain.

[0032] Next, the processing to the interrupt printout demand by external factors (facsimile reception) is explained with reference to drawing 2 among interrupt printout demands other than copy processing. In a digital multifunctional image processing system, the condition of the timer mentioned above when the receive state of facsimile was supervised (step S 2-1) and reception of facsimile was started (interrupt printout demand) is checked (step S 2-2), and when it judges that a timer is not 0, memory reception is started. That is, reception is started, carrying out [accumulate the received data from the outside in memory 37 (step S 2-3), and] a printout to Printer P, if Printer P is an idle state, since it is not copy mode when a timer is 0 (step S 2-4).

[0033] Moreover, the report printout demand which outputs automatically the communication link hysteresis of facsimile and the error under communication link may be received. Reception is started, carrying out [when it is judged as such those with an automatic interruption printout demand (step S 2-5), check the condition of a timer (step S 2-6), and] a printout to Printer P step S2-1, if Printer P is an idle state, since it is not copy mode when return and a timer are 0, when a timer is not 0 (step S 2-7).

[0034] Here, the configuration of each means used as the requirements for a configuration in a claim is connected to the processing on a flow chart here, and is explained. A copy actuation input judging means to judge the condition that setting actuation for copy processing is performed is equivalent to step S1-1 and S1-3-S1-4.

[0035] An interrupt printout demand judging means to judge the existence of interrupt printout demands other than copy processing is equivalent to step S1-9, S2-1, and S2-5. The printout means for stopping which stops the interrupt printout when interrupt printout demands other than copy processing are during the period when setting actuation for copy processing is performed is equivalent to step S1-10 and S1-11. In addition, it is judged by the check of the timer value in step S1-7 whether it is during the period when setting actuation for copy processing is performed. An internal-interruption printout demand judging means to judge the existence of interruption of the interrupt printout demand to this printer P from the terminal by which Rhine connection was made is equivalent to Printer P step S1-9. A priority setting means is realized by the input from a control unit 33 or a terminal. A printout interrupt means to output to a printer the data transmitted from the terminal when an interrupt printout demand was during the period when setting actuation for copy processing is performed where priority is given to the printout from a terminal with this priority setting means from a terminal is equivalent to step S1-15 and S1-16. In addition, it is judged by the check of the timer value in step S1-12 whether it is during the period when setting actuation for copy processing is performed. A copy setting invalid judging means to judge the setup till then as an invalid when a setup for copy processing is cleared by the control unit 33 is equivalent to step S1-5. When the interrupt printout demand from a terminal is during the setting actuation for copy processing, a parameter storage means to memorize a copy operation parameter at the

copy processing interruption time is equivalent to step S1-14. A parameter resetting means to read a copy operation parameter and to set it as a control unit after performing processing by the internal-interruption printout demand from a terminal is equivalent to step S1-21.

[0036] Next, the second gestalt of operation of this invention is explained. The gestalt of this operation is the example applied to the digital multifunctional image processing system of a book mold. The same part as the part explained in the gestalt of pre-operation also omits explanation using the same sign. As shown in drawing 6, the scanner 52 of a book mold is formed in the upper part of the body 51 of equipment of a digital multifunctional image processing system, and the printer P which carries out a printout to the imprint form which has the form conveyance way 4 conveyed is formed in the interior.

[0037] The body 53 of a scanner of said scanner 52 is supported by the pivot 54 free [vertical rotation] so that the top face of the body 51 of equipment can be opened wide. The read station 55 which reads an image and which can be scanned is formed in the interior of the body 53 of a scanner, the contact glass 56 which lays a manuscript is formed in a top face, and the pressure plate 57 which can be opened and closed and which presses down the manuscript on this contact glass 56 is formed. While the manuscript tray 58 which loads a manuscript into this pressure plate 57 is formed, two or more rollers 59 which convey the manuscript on this manuscript tray 58 back (it sets to drawing 6 and is the right) are formed. Moreover, the same control unit 33 as the gestalt of pre-operation is formed in the top face of the near side (it sets to drawing 6 and is the left) of the body 53 of a scanner.

[0038] Such a scanner 52 is constituted so that the reading format of putting a manuscript on the top face of contact glass 56, pressing this down with a pressure plate 57, fixing, scanning a read station 55 along with contact glass 56, and reading an image, and the reading format of making a read station 55 standing it still by the position, conveying the manuscript loaded into the manuscript tray 58 with a roller 59, and reading an image with delivery can be chosen.

[0039] The tray 19 which supports the imprint form to print is formed in the posterior part of the body 51 of equipment, and the paper output tray 60 is formed in the anterior part of the opposite side. Printer P is formed in the interior of the body 51 of equipment with the same configuration as the gestalt of pre-operation. That is, a latent image is formed in the front face of a photo conductor 9 by the latent-image formation section 18, the latent image is developed in the development section 11, and the development image on a photo conductor 9 is imprinted by the imprint section 12 in the imprint form to which paper was fed from the tray 19, and it is constituted so that the imprint form which was established by the fixing section 25 and established in the transfer picture may be delivered to a paper output tray 60 with the delivery roller 30.

[0040] The electronic circuitry which controls such a digital multifunctional image processing system is the same as the electronic circuitry fundamentally explained with reference to drawing 5, and it can transmit outside (use gestalt as a transmitting mode of facsimile), or the image read with the scanner 52 can feed paper to an imprint form from a tray 19, and can print a reading image in this imprint form (use gestalt as a copying machine). Or the image transmitted from the outside is printable in an imprint form (use gestalt as the receive mode of facsimile). Furthermore, it can be used as a printer which prints out the data from PC which made Rhine connection.

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DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]

[Drawing 1] It is the flow chart which shows the user actuation processing in the first gestalt of operation of this invention.

[Drawing 2] It is the flow chart which shows the processing to the interrupt printout demand by external factors.

[Drawing 3] It is the perspective view showing the appearance of a digital multifunctional image processing system.

[Drawing 4] It is the vertical section side elevation showing the internal structure of a digital multifunctional image processing system.

[Drawing 5] It is the block diagram showing an electronic circuitry.

[Drawing 6] It is the vertical section side elevation showing the digital multifunctional image processing system in the second gestalt of operation of this invention.

[Description of Notations]

P Printer

2 Scanner

33 Control Unit, Priority Setting Means

37 Memory

40 Modem

S1-1, S1-3-S1-4 Copy actuation input judging means

S1-5 Copy setting invalid judging means

S1-9 Internal-interruption printout demand judging means

S1-9, S2-1, S2-5 Interrupt printout demand judging means

S1-15, S1-16, S1-12 Printout interrupt means

S1-10, S1-11, S1-7 Printout means for stopping

S1-14 Copy operation parameter storage means

S1-21 Parameter resetting means

[Translation done.]

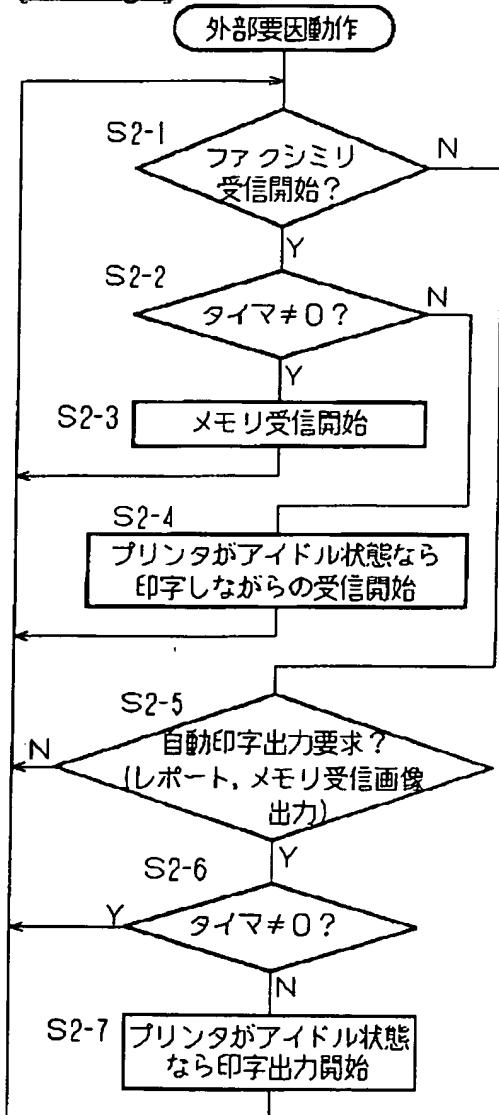
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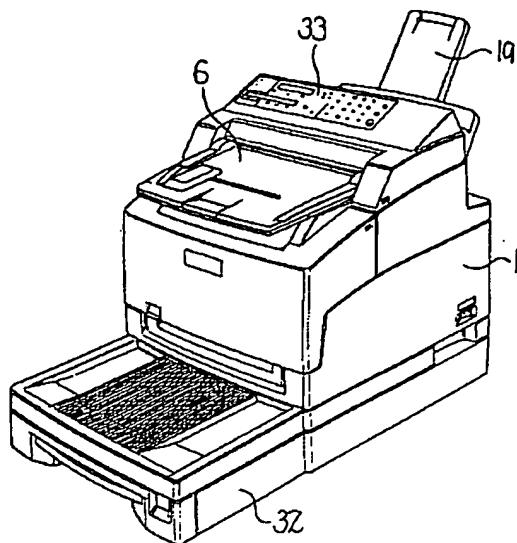
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DRAWINGS

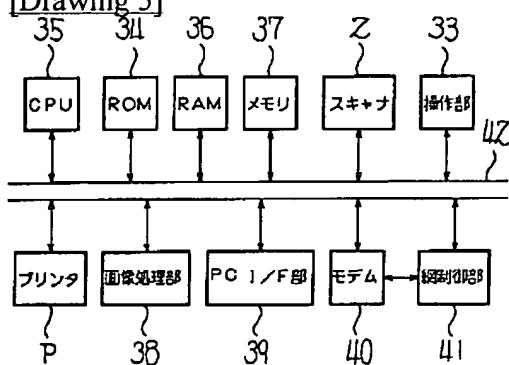
[Drawing 2]



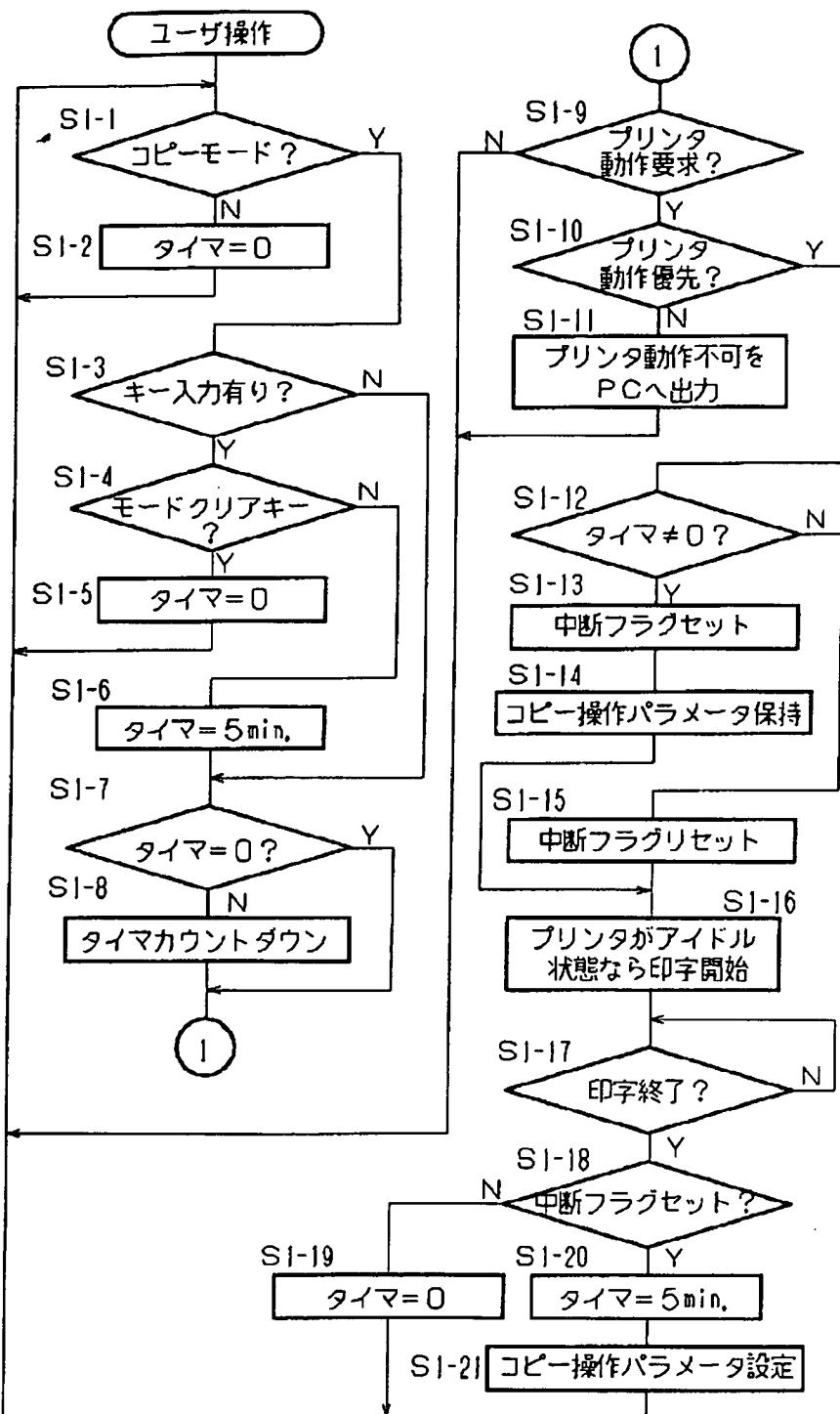
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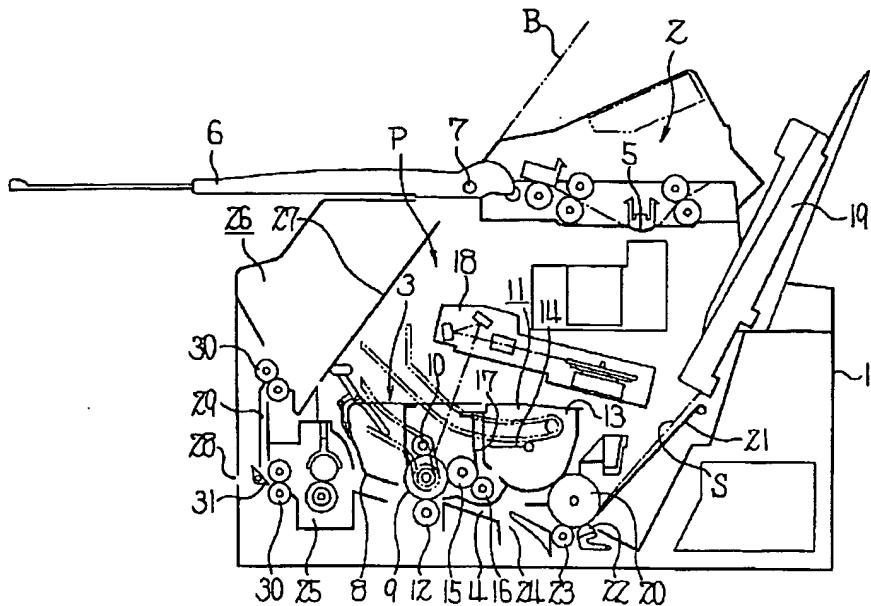
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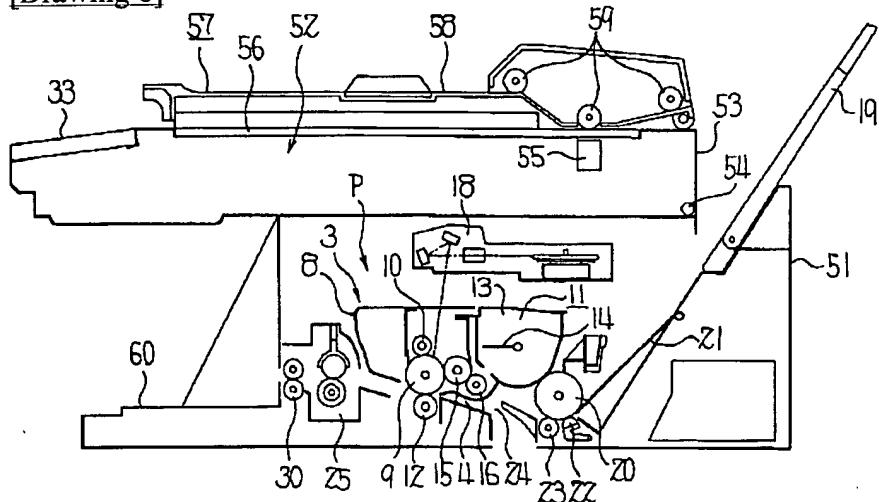
[Drawing 1]



[Drawing 4]



[Drawing 6]



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